

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[The MINING JOURNAL is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.]

No. 2095.—VOL. XLV.

LONDON, SATURDAY, OCTOBER 16, 1875.

[WITH SUPPLEMENT.] {PRICE SIXPENCE. PER ANNUM, BY POST, £1 4s.

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
Established 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Miscellaneous, Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and Dock Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value. BUSINESS in all COLLIERIES and IRON Shares, and in the principal WAGON and MANUFACTURING COMPANIES of the NORTH of ENGLAND and SCOTLAND.

Mr. J. H. CROFTS, having now established CORRESPONDING AGENCIES in all the Chief Towns of the United Kingdom, is prepared to deal in the various LOCAL Stocks and Shares at close market prices.

COTTON SPINNING SHARES Bought and Sold, including those of Oldham, Bury, Heywood, Darwen, Accrington, and neighbouring districts. This description of security can be purchased to pay the investor very fair interest upon outlay. Accounts opened for the Fortnightly Settlement.

Monthly and Daily Price Lists issued.

Bankers: City Bank, London; South Cornwall Bank, St. Austell.

SPECIAL DEALINGS in the following, or part:—20 Asheton, 25s. 6d.; 30 Bampfyde, 15s.; 20 Bog, 10s.; 10 Bilson, £10 10s.; 50 Cardiff and Swansea, £3 5s.; 5 Cathedral, 25s. 6d.; 50 Chapel House, £4 7s. 6d.; 15 Colorado, £2 7s. 6d.; 10 Cape Copper, 15s.; 15 East Caradon, 25s.; Eberhardt, 30s.; 30 Flagstaff, 20s.; 50 Javali, 11s. 6d.; 50 Lawe's Chemical, £7 2s. 6d.; 20 Langdale Chemical, £5 10s.; 50 Mynydd Iron, £13 6s.; 30 Marke Valley, 100s.; Prince of Wales, 4s. 6d.; 60 Parys Mountain, 11s. 6d.; 40 Pennerley, 25s. 6d.; 50 Penstruthal, 12s.; 75 Plynlimmon, 9s.; 15 Roman Gravel, 15s.; 15 Sweetland, £3; 10 Tankerville, 20s.; 20 Thorp's Gawber, £7 10s.; 15 Van Consols, £13 10s.; 20 Van, £29; 15 West Chiverton; 20 West Tankerville.

BUYER OF POSITIVE ASSURANCE SHARES.

Shares sold for forward delivery (one or two months) on deposit of 20 per cent. Business on hand in all the leading TIN, COPPER, and LEAD SHARES.

RAILWAYS.—SPECIAL BUSINESS. Fortnightly accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

PATELEY BRIDGE LEAD AND SMELTING.—Special Business in these shares. A few for sale at lowest prices.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

MR. W. H. BUMPUS, STOCK AND SHARE BROKER,
44, THREADNEEDLE STREET, LONDON, E.C.

Transacts business in MINING and COLLIERIES Shares of every description. English and Foreign Stocks, Colonial Government Bonds, Railways, Banks, and Miscellaneous Shares, and all Securities dealt in on the London Stock Exchange, for INVESTMENT or SPECULATION.

Purchases and Sales negotiated in Unmarketable Stocks and Shares. Speculative Accounts opened for the Fortnightly Settlement.

References given and required when necessary.

A Stock and Share List forwarded to bona fide Investors free on application.

Bankers: The National Provincial Bank of England, E.C.

SPECIAL BUSINESS in the undermentioned, at close market prices:—
Asheton. Roman Gravel.
Bog. Richmond.
Birdseye Creek. South Condurrow.
Carn Brea. Sweetland Creek.
Cape Copper. St. Patrick.
Cathedral (Copper). Tankerville.
Chapel House Colliery. Tincroft.
Chicago (Silver). Van.
Dolcoath. Parys Mountain.
Don Pedro. Penstruthal.
Devon Consols. West Chiverton.
Eberhardt. West Tankerville.
Flagstaff. Port Phillip.
Frontino. Wheal Uny.

IMPORTANT.—Intending investors should lose no time in securing shares in well selected mines at the low quotations now ruling, as an early and substantial advance may be confidently relied upon. Provided proper discrimination is exercised in the selection, there are, at present few, if any, other securities in the market which offer such a favourable field for investors, and considering the extremely low prices of the majority of shares in sound dividend and progressive mines, anyone investing now has the advantage of a minimum of risk, and will in all probability be enabled to realise handsome profits within a short period.

W. H. B. will be happy to furnish, on application, a list of shares which are likely to have an early rise in market value.

WILLIAM HENRY BUMPUS, SWORN BROKER.
OFFICES—44, THREADNEEDLE STREET, LONDON, E.C.

MESSRS. PYNE AND ASHMEAD,
CITY MINING AGENTS,
LONDON MANAGEMENT OF COMPANIES UNDERTAKEN.
ACCOUNTS AUDITED, LIQUIDATIONS CONDUCTED.
6, BISHOPSGATE STREET WITHOUT, LONDON, E.C.

FERDINAND R. KIRK, STOCKBROKER,
5, RICHIN LANE, E.C.

SPECIAL BUSINESS in—
Alltani Colliery. Eberhardt. Anglo-Cable.
Chapel House. Cardiff and Swansea. Direct Cable.
Cape Copper. Richmond. Lawe's Chemical.

Consols, Foreign Bonds, Railways, and every security quoted on 'Change bought and sold. Clients giving the usual "cover" can open accounts for the fortnightly settlement. References given when necessary in most of the leading towns of the United Kingdom.

JOHN RISLEY (SWORN), STOCK AND SHARE BROKER,
77, CORNHILL, LONDON.

Business transacted at the following rates of commission:—Foreign Stocks, 1/4 per cent.; and Mining Shares of £4 each and upwards, 1/4 per cent.; under £4, 1s. per share.

MESSRS. W. J. TALLENTIRE AND CO.,
STOCK AND SHARE BROKERS,
20, CHANGE ALLEY, CORNHILL, LONDON, E.C.

Transact business in Stock Exchange Securities and Mining Shares of every description, either for immediate cash or the usual bi-monthly settlements, and also afford advice personally or by letter to executors, trustees, capitalists, and investors of every class in the selection of Securities for safe and profitable investment, their experience of the markets, extending over a period of more than sixteen years, together with special facilities for acquiring information, enabling them to act beneficially for clients.

They have established Corresponding Agencies in all the principal towns of the United Kingdom, and are prepared to deal in the various local Stocks and Shares at close prices. Orders per post or telegraph receive prompt attention.

Every Investor should read the October number of Messrs. W. J. TALLENTIRE and Co.'s Circular, which will be sent post free on application.

MR. W. TREGELLAS, 122, BISHOPSGATE STREET
WITHIN, E.C.

Deals in all descriptions of Stocks and Shares at close market prices.

MESSRS. A. ENDEAN, FISHER, AND CO., STOCK AND SHARE
DEALERS, 3, LOMBARD COURT, LOMBARD STREET, E.C.
Bankers: London and Westminster, Lothbury.

MR. W. MARLBOROUGH, STOCK AND SHARE DEALER,
29, BISHOPSGATE STREET, LONDON, E.C. (Established 19 Years).

can sell the following SHARES, at prices annexed:—
30 Alltani Colliery. 60 Glaisdale, 20s. 70 Penstruthal, 11s. 6d.
30 Asheton, 25s. 6d. 50 Gold Run, 17s. 3d. 90 Plynlimmon, 8s. 9d.
30 Bedford Unit, 17s. 6d. 30 Hington, 15s. 9d. 50 Parys Mount, 12s. 9d.
70 Bog, 7s. 3d. 75 Javali, 11s. 6d. 10 Richmond, £9 6s. 3d.
40 Chontales, 12s. 25 Ladywell, £25. 25 Sweetland, £2 18s. 6d.
30 Cathedral, 25s. 6d. 50 Last Chance, 20s. 6d. 100 So. Roman Grav. 9s.
20 Colorado, £25. 20 Marke Valley, £35. 20 So. Tolcarne, 10s.
30 Don Pedro, 13s. 20 Mynydd Gorda, £6 1/2. 60 St. Patrick, 22s. 6d.
25 Emma, 25s. 3d. 20 New Quebrada, £15. 25 West Maria, 6s. 6d.
30 Eberhardt, 25s. 3d. 100 Prince of Wales, 4s. 25 West Godolphin, 25s.
60 Flagstaff, 21s. 9d. 50 Port Phillip, 17s. 100 West Milver, 4s.
30 Frontino, 22s. 60 Pennerley, 25s. 30 W. Tankerville, 27s.
30 Gunnislake, 45s.

INVESTMENTS IN STOCKS AND SHARES.—
BRITISH AND FOREIGN STOCKS AND SHARES BOUGHT AND SOLD.

List of Prices and other information sent on application.

Bankers: The Alliance Bank (Limited), London.

Mr. P. WATSON, 79, OLD BROAD STREET, LONDON, E.C.

(Close to Stock Exchange.)

FINANCIAL OPERATIONS NEGOTIATED.

MR. ALFRED E. COOKE, STOCK AND SHARE DEALER,
76, OLD BROAD STREET, LONDON, E.C.
(Established 1853.)

Business transacted in nearly all Coal, Iron, Manufacturing, and Miscellaneous Shares.

STOCK EXCHANGE.—Speculators can do business on advantageous terms. Special information as to operating in Railways and Foreign Stocks.

The publication of the October Circular has been unavoidably delayed; it will be issued, however, on Monday next. Send address at once, with stamp.

MR. T. E. W. THOMAS, SWORN SHARE BROKER,
3, GREAT WINCHESTER STREET BUILDINGS, E.C.
Established 1867.

The following are the latest prices at which business could be done. Where the difference between the buying and selling price is wide transactions may be effected at an intermediate price:—

Buyers.		Sellers.		Buyers.		Sellers.	
Birdseye Creek	1 1/4	1 1/4	Plynlimmon	8s.	8s.	Port Phillip	14s.
Bog	6s.	6s.	Richmond	12 1/2	12 1/2	Roman Gravel	13
Devon Great Consols	2 3/4	2 3/4	St. Patrick	1 1/2	1 1/2	South Carn Brea	13 1/2
Ding Dong	5	5	South Condurrow	6 1/2	6 1/2	So. Roman Gravel	7s. 6d.
Dolcoath	47	49	Sweetland Creek	2 1/2	2 1/2	Tankerville	10 1/2
Don Pedro	14s.	15s.	Tincroft	24	26	Unkity Wood	12s. 6d.
Eberhardt	8	8 1/2	Van	28	30	Van Consols	13 1/2
East Caradon	2 1/2	2 3/4	West Chiverton	10	10 1/2	West Maria	4s.
East Lovell	7 1/2	7 3/4	West Tankerville	1 1/2	1 1/2	Wheal Crebor	3
Flagstaff	1	1 1/2	Wheal Grenville	2 1/2	3	Wheal Kitty (St. Agnes)	3 1/2
Gawton	11s.	11s.					
Gold Run	16s.	16s.					
Hington Down	16s.	16s.					
Javali	12s.	14s.					
Marke Valley	3	3 1/2					
New Quebrada	3 1/2	3 1/2					
New Rosario	5s.	6s.					
Parys Mountain	11s.	13s.					
Pateley Bridge	6 1/2	6 1/2					
Pennerley	1 1/2	1 1/2					
Penstruthal	10s. 6d.	11s. 6d.					

MR. WILLIAM WARD
(LATE WARD AND LITTLEWOOD),
CROSBY HOUSE,
95, BISHOPSGATE STREET WITHIN, E.C.,
STOCK AND SHARE BROKER.

MR. E. J. BARTLETT, STOCK AND SHARE DEALER,
No. 30, GREAT ST. HELEN'S, LONDON, E.C. (Established 10 years),
has SPECIAL BUSINESS in South Condurrow, Prince Patrick, Wheal Kitty, Penhalls, and Chapel House Shares at close prices.

G. E. SIMPSON, STOCK AND SHARE DEALER,
6, GREAT WINCHESTER STREET BUILDINGS, LONDON, E.C., will

SELL the FOLLOWING SHARES, free of commission:—

25 Asheton, 25s.	50 Frontino, 22s.	50 Pennerley, £15.
50 Almada, 13s.	75 Gold Run, 16s. 3d.	100 Penstruthal, 12s.
75 Birdseye, £15 1/2.	5 Great Laxey, £16 1/2.	50 Roman Grav., £12 1/2.
50 Bog, 7s. 3d.	70 Hington, 15s.	50 Richmond, £29 1/2.
100 Chapel House, £4 7s. 6d.	100 Javali, 11s.	100 Sweetland Cr., £2 18
50 Cathedral, 25s. 6d.	30 Ladywell, £2 13s. 9d.	75 St. Patrick, £1 2s. 6d.
10 Devon Consols, £23 1/2.	50 Marke Valley, £3 3s. 9d.	25 Tankerville, £10 1/2.
50 Eberhardt, £25 1/2.	100 Mynydd Gorda, £6 1/2.	10 Van, £29.
10 East Lovell, £8.	75 Pateley Bridge, £6 1/2.	50 Van Consols, £1 18s. 9d.

Special Business in the Oregon Gold Mines.

MESSRS. HARLAND AND CO., STOCK AND SHARE
DEALERS, 235 and 236, GRESHAM HOUSE,
OLD BROAD STREET, LONDON, E.C.
Bankers: London and County Bank.

Messrs. H. and Co. have Special Business in Chapel House and Alltani Collieries Shares, also in the shares of the Oregon Gold, and the Patent Ligno Mineral Paving Companies, and will be happy to give full particulars of the above desirable investments on application.

Dealings at closest market prices in all kinds of Stocks and Shares.

MESSRS. MARSHALL, BROWN, AND CO.,
STOCK AND SHARE DEALERS,
63, CORNHILL, LONDON, E.C.

Some Bampfyde Shares FOR SALE at a low price.

MESSRS. HARVEY, JORDAN, AND CO.,
MINING ENGINEERS AND AGENTS, ACCOUNTANTS, AUDITORS,
MANAGERS OF PUBLIC COMPANIES, &c.

In connection with Messrs. TRAIL, FOSTER, and Co., Georgetown, Colorado.

Mineral Properties Inspected.

LONDON OFFICES—30, MOORGATE STREET, E.C.

THE LIANTHRISTAN TIN PLATE WORKS.
THE PLANET SILVER MINING CO.

MR. THOMAS THOMPSON, JUN., 1, PALMERSTON
BUILDINGS, BISHOPSGATE STREET, LONDON, E.C.
Some valuable hints as to the purchase of mining shares will be found in Mr. Thompson's "Investment Circular" for Oct. now ready, post free, price 6d.

MESSRS. ENDEAN AND CO., STOCK AND SHARE
DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.
Government and every negotiable Stock dealt in for cash or account. Orders and telegrams punctually attended to.

MESSRS. J. TAYLOR AND CO., 86, LONDON WALL, E.C.,
and MINING EXCHANGE, SOUTH KING STREET, MANCHESTER,
MINING ENGINEERS AND INSPECTORS.
Business done in all descriptions of Stocks and Shares.

MR. JAMES STOCKER, STOCK AND SHARE BROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
Bankers: London and Westminster.

Transactions in Railway Shares, Foreign Stocks, Bonds, Debenture, Bank, Telegraph, Insurance, and all Miscellaneous Stocks, either for cash or the fortnightly settlement, and accounts opened for same.

SPECIAL BUSINESS in the following British and Foreign Mines, Colliery, and other Shares:—20 Birdseye; 15 Bilson and Crump, £10; 70 Bog, 7s. 6d.; 55 Cleve Hill, 4s. 3d.; 50 Cathedral, 25s. 6d.; 40 Central Van, offered wanted; 30 Cedar Creek, 17s.; 30 Carn Brea, 50s.; 30 Chicago; 75 Chontales, 12s.; 50 Chapel House, 37s.; 45 Colorado; 10 Cook's Kitchen, 8s.; 75 Don Pedro, 13s.; 20 Devon Consols, 58s. 9d.; 30 East Caradon; 50 East Van, 31s.; 40 Emma, 24s. 3d.; 20 Eberhardt; 50 Flagstaff, 19s. 6d.; 60 Frontino, 21s. 9d.; 70 Gold Run, 17s. 6d.; 35 Great Laxey, 16s.; 60 Great West Van, 6s. 9d.; 30 Grogwinlon; 25 Gunnislake; 30 Gawton, 12s. 6d.; 30 Hington, 15s. 3d.; 10 Hornachos, £20; 50 Javali, 12s. 3d.; 50 Killifreth; 40 Last Chance, 21s.; 50 Ladywell, £15; 55 Malabar, 9s.; 40 Marke Valley, 3 1/2; 40 New Consols; 65 New Quebrada, 3 1/2; 60 Old Treburgett; 40 Pateley Bridge, £6 3s. 9d.; 60 Penstruthal, 12s.; 50 Pennerley, 25s.; 10 Port Nigel; 30 Port Phillip, 16s. 9d.; 50 Plynlimmon, 8s. 9d.; 70 Parys Mountain, 12s. 3d.; 70 Prince of Wales, 4s. 6d.; 40 Prince Patrick, £3; 30 Richmond, £29 1/2; 120 Rica, 4s. 6d.; 75 Rookhope; 30 Sweetland, £2 1/2; 100 South Aurora, 9s.; 35 South Carn Brea, 37s. 6d.; 40 So. Roman Gravel, 9s. 6d.; 40 St. Patrick, 22s.; 30 Thorp's Gawber, 7 1/2; 100 Tooma, 12s. 3d.; 30 Tankerville, 10s.; 10 Tincroft, £27; 5 Van, £29; 50 Van Consols, 5s. 6d.; 30 West Chiverton, £18; 50 West Maria, 5s. 9d.; 10 Western Andes; 15 Wheal Kitty; 40 West Tankerville, 28s. 9d.; 20 Wheal Grenville, 50s.; 10 Wheal Uny, £3 1/2.

MR. T. P. THOMAS, MINING AGENT,
3, CROWN COURT, THREADNEEDLE STREET, LONDON.

Reliable information as to the appearance and prospects of the Shropshire, Welsh, and Isle of Man Lead Mines for the guidance of investors supplied to bona fide capitalists.

Purchases and Sales of Shares conducted on the best market terms. The latest news from Roman Gravel, Tankerville, Pateley Bridge, St. Patrick, and other Mines, either Dividend or of great promise.

MR. CHARLES THOMAS,
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MESSRS. A. W. THOMAS AND CO.,
10, COLEMAN STREET, E.C.,
MINING AGENTS, AND STOCK AND SHARE DEALERS,

Price Sixpence.

"INVESTMENTS AND SPECULATIONS FOR 1875."

A. W. T. and Co. have business in the shares of South Tolcarne Mine, also in Whitehaven Iron Company and Chapel House Colliery.

HENRY CAMERON AND CO., STOCK AND SHARE BROKERS
AND DEALERS, 36, NEW BROAD STREET, LONDON, E.C.

Have SPECIAL BUSINESS in Sound Dividend-paying Cotton Manufacturing and Spinning Companies. Also, in non-risky Mining Shares—as Chicago Silver, Gold Run, and other sure Mines.

Cameron's "Investment Gazette" sent on receipt of three stamps.

MR. J. J. REYNOLDS, MINE, STOCK, AND SHARE DEALER,
26, NEW BROAD STREET, has Business in the following Mines:—St. Agnes Consols, Pedn-an-drea, and Old Tincroft.

J. J. REYNOLDS strongly urges purchase in tin mines, several of which he can specially recommend. These mines, at great cost and outlay, have been so laid open that they are certain to make great profits shortly, and can now be purchased at low prices—in some instances, at half the amount of money expended. J. J. REYNOLDS' Mining Pamphlet will be published first week in November, price Sixpence.

BRITISH LEAD MINES.—

Will shortly be published, a Pamphlet on BRITISH LEAD MINES.

By J. H. MURCHISON, Esq., F.R.G.S.

Copies can be ordered at No. 8, Austin Friars, London, E.C.

MESSRS. J. M. LAWRENSEN AND CO.,
ACCOUNTANTS,
SHARE AND MINE BROKERS,
ARCADE CHAMBERS,
96, DEANSGATE, MANCHESTER.

GROSVENOR, ENTWISLE, AND CO.,
(LATE GROSVENOR AND CO.),
STOCK AND SHARE BROKERS,
32, OXFORD STREET, AND 88, PORTLAND STREET, MANCHESTER.

MR. EDWIN SKEWIS, WATCHET, SOMERSET,
MINING AGENT, ENGINEER, AND SURVEYOR.

Complete Plans and Sections. Specifications and Estimates prepared for all kinds of Engineering Work. Surveys of all descriptions made and levels taken. Mines managed. Machinery erected. Reports on Mineral Properties.

MR. R. PERCY ROBERTS
FINANCIAL AGENT,
60, ENGLISH STREET, CARLISLE.

MR. J. S. MERRY,
ASSAYER AND ANALYTICAL CHEMIST,
SWANSEA.

MR. TIMOTHY HUGHES,
59, SEEL STREET, LIVERPOOL.

The Registered Office of the PRINCE PATRICK GROSVENOR, WEST BRYN CELYN, CENTRAL FOXDALE, and GREAT EAST FOXDALE LEAD MINING COMPANIES (LIMITED).

Full information respecting these Mines forwarded on application.

RELIABLE INFORMATION given respecting Mines in the Isle of Man, Flintshire, and the neighbouring districts.

MR. W. F. STANLEY, MATHEMATICAL INSTRUMENT
MANUFACTURER TO H.M.'S GOVERNMENT, COUNCIL OF INDIA,
SCIENCE AND ART DEPARTMENT, ADMIRALTY, &c.
MATHEMATICAL, DRAWING, AND SURVEYING INSTRUMENTS of every description, of the highest quality and finish, at the most moderate prices.

Price-list post free.

ENGINE DIVIDER TO THE TRADE.

ADDRESS—GREAT TURNSTILE, HOLBOEN, LONDON, W.C.

ROCK-DRILL.—A ROCK-DRILL AND CARRIAGE, of the best construction, full size, and ready for work—£35. Has never been used. EDWARDS and Co., 38, Southampton-buildings, Chancery-lane, London.

MR. JOHN SPRAGUE, late General Manager of the El Dorado Gold Mining Company, Nova Scotia, SEEKS similar EMPLOYMENT or INSPECTION in any healthy part of the world. First class references. Address, Tenby Villa, Holloway, N., London.

MESSRS. VOSPER AND CO., 48, FINSBURY CIRCUS, call special attention to the GREAT PANTY-Y-PYDEW LEAD MINE. See Sales of Lead Ore in this day's Journal.

For shares in this and other properties, apply as above.

NORTH LAXEY.—FOR SALE, ONE HUNDRED SHARES in this VALUABLE MINE (£2 per share paid up). For information see paragraph in Mining Journal of 2nd October, page 1055, and to-day's Journal, page 1141.

Address, "W. X." MINING JOURNAL Office, 26, Fleet-street, London.

SILVER CROSS MINE.—In consequence of a GREAT DEMAND FOR THESE SHARES, a RISE of 2s. 6d. has taken place. WANTED TO PURCHASE, at 22s. 6d., and SELLERS of a few at 25s. each net. The mine is likely to prove a great mining success. Copies of Special Reports may be had on application to Messrs. D. MACKENZIE and Co., Cherry-street, Birmingham, Brokers for every kind of Securities. October 7, 1875.

REMOVAL OF OFFICES TO 76, CHEAPSIDE

From 21, Gresham-street, London, E.C.

WIRE TRAMWAYS ARE NOW IN OPERATION IN ALL

PARTS OF THE WORLD.

By recent improvements, inclines as steep as 1 in 3 can be surmounted, and railways up to 200 yards can be crossed without intermediate support. Quantities from 50 to 500 tons daily can be thus transported. For full information, and references to examples at work, apply to the Engineer, W. CARRINGTON, 76, CHEAPSIDE.

WIRE-ROPE TRAMWAYS AND BRIDGES, AND
SUSPENDED RAILWAYS, on the GRAVITATION PRINCIPLE (under PALMER'S Patent), are manufactured by
GWYNNE AND CO., CIVIL AND MECHANICAL ENGINEERS,
ESSEX STREET WORKS, STRAND, LONDON.

At a cost of from £150 to £500 per mile.

When applying for Estimates, send full particulars of work required to be done.

1150 BLAKE'S PATENT ORE-CRUSHER
NOW IN USE.

For catalogues, apply to—
MR. H. R. MARSDEN, ROHO FOUNDRY, LEEDS.
Only maker in the United Kingdom.

Original Correspondence.

THE VISIT OF THE NORTH OF ENGLAND MINING AND MECHANICAL ENGINEERS TO YORKSHIRE.

The great event of the week in the West Riding has been the visit of the North of England Institute of Mining and Mechanical Engineers, which for some time past has been looked forward to with very great interest. The arrangements made were most complete, and committees were formed in Leeds, Barnsley, and Sheffield to receive the visitors, and see that they were accompanied to the various places of interest in the respective towns and districts. To carry out the programme, and give due eclat to the proceedings, a subscription was entered into, the list being headed by Earl Fitzwilliam with 50*l.*, whilst the Messrs. CHARLESWORTH gave a similar sum. Mr. T. W. EMBLETON, president of the Midland Institute, 20*l.*, and the colliery owners and mining engineers of South Yorkshire handsomely responding to the application made to them, so that the gathering should be a thorough success.

The North of England Institute, it may be said, is now the first mining and engineering body in the kingdom. It was established in 1852, since which time it has had for its presidents the late Mr. NICHOLAS WOOD—the nestor of the mining engineers of a quarter of a century ago—Sir G. ELLIOT, Bart., Sir W. G. ARMSTRONG, K.C.B., F.R.S., Mr. FORSTER, Mr. BOND, &c. Its members now number nearly 800, and its president is Mr. LINDSEY WOOD (son of the late NICHOLAS WOOD), a gentleman who is well known in the mining world, not only for his eminence as an engineer, but also as a proprietor of extensive collieries in the county of Durham. The visitors have been the guests of the Midland Institute of Mining, Mechanical, and Civil Engineers, the head-quarters of which are at Barnsley. The Northern Association, however, had a good deal to do with the establishment of the one in Yorkshire, which can fairly lay claim to being second only to the former. It was in the year 1857, shortly after there had been an explosion at the Lund Hill Colliery, near Barnsley, by which 189 men and boys were killed, that the first idea of the formation of an association was enunciated.

As we are informed by Mr. WOODHOUSE, the eminent mining engineer, he was called in after the explosion, and associated with two of the most eminent mining engineers in the North of England, Mr. NICHOLAS WOOD and the present Sir GEORGE ELLIOT. Questions, he says, of vital importance were discussed as regards the ventilation and safety of coal mines, and it was after the proceedings incidental to that enquiry were over that the idea of forming the association was carried out. He also states that the large Association of Mining Engineers of Newcastle might possibly have suggested the plan. The South Yorkshire Viewers' Association was then formed, and on July 21, 1858, the inaugural address was delivered by Mr. WOODHOUSE, in which he alluded to the district as being the "mighty coal field, unrivalled by that of Northumberland and Durham, or South Wales, for it is at present unexplored, whilst they are comparatively defined." That the new body looked up to the body at Newcastle is evident from one resolution proposed by Mr. WOODHOUSE at the first meeting, and agreed to "That the members of the North of England Institute of Engineers be invited to co-operate with this Institution." For a considerable time the proceedings of the Viewers' Association were very quiet, and as many engineers and managers without its pale considered it too exclusive, several meetings in the early part of 1869 were held in Barnsley and Wakefield for the purpose of forming an independent association, and rules and regulations were drawn up. Ultimately, however, the two bodies combined under the name of the Midland Institute of Mining Engineers, and on Aug. 2, 1869, the inaugural address was delivered by Mr. T. W. EMBLETON, the first president. Mr. WOODHOUSE being present on the occasion. Such is an outline of the two associations, the members of which—or at least a large number of them—have for the first time met together, and we look upon the visit of the northern gentlemen as well calculated by an interchange of ideas with those of Yorkshire to lead to valuable suggestions being made for giving increased safety to those engaged in the fiery mines of South Yorkshire.

Of the coal field itself, which has been visited by the members of the Northern Institute, it has many singular and important features that are to be found in no other, so that a brief notice of it will not be out of place, and may be of some interest even to those who so recently passed through it. The Midland coal field, of which Barnsley forms the most valuable portion, is the largest in England, the area beyond the margin of the magnesian limestone and Permian being about 760 square miles, the greatest thickness of the end measures, including the lower series, being 4500 ft. In the Barnsley district the coal attains its greatest thickness, the powerful seam in some instances being upwards of 10 ft. thick, that bed passing through the magnesian limestone, and the Lower Permian sandstone passes the Shafton, Woodmoor, Kent, and other seams of coal, and is reached at about a depth of 520 yards from the surface. Below it is the Parkgate coal, extensively worked in the district, being a very good house coal. Below that, at a depth of more than 200 yards, we come to the valuable Silkstone seam. The peculiarities of the latter are its qualities as a house coal, being equal to the best Durham, and the large quantity of gas it gives off in the northern part of the field. The seam forms the datum line for identifying all the other seams from one end of the coal field to the other, but it is subject to many alternations with respect to thickness and quality. In its fossil flora, according to the high authority of Mr. WOODHOUSE, it is the richest of our seams as a whole, and presents most splendid specimens of *Lepidodendron*, whilst above it and below it are valuable beds of ironstone. Its average thickness is about 5 ft., and it gives off a large quantity of gas, very often from feeders or fissures at the bottom. Above the Silkstone, at a distance of about 370 or 380 yards, is the Barnsley seam, the most valuable in the entire Midland field, and is worked not only to the north of Barnsley, but also close to the town of Nottingham, and is very valuable in its stratum. It is found, as before stated, under the magnesian limestone, a fine section of which has been given in our notice some time since of the Shireoaks Colliery, sunk on the estate of the Duke of Newcastle, near to Worksop. Having said so much with respect to the important coal field of South Yorkshire, visited by the Northern Engineers on Thursday, it only remains for us to refer our readers to the report of the collieries visited in that important district, and to the interesting papers read at Barnsley. In conclusion, we can only express the feeling and belief that the gentlemen from the North will return to their homes not only pleased with the hearty welcome they have received from their brethren in Yorkshire, but highly gratified with what they had seen during their visit.

On Thursday the Mining Engineers of the North arrived at Barnsley, for the purpose of visiting the South Yorkshire coal field, on the invitation of the Midland Institute of Mining Engineers. About 11 o'clock they met in the Corn Exchange; and after the reading of papers by Mr. RUSSELL, F.G.S. (of the Geological Survey of England); Mr. GREEN, Professor of Mining and Geology in the New College at Leeds; and Mr. HENRY DAVEY (of HATHORN, DAVIS, CAMPBELL, and DAVEY, of Leeds), the party broke up into sections to visit different collieries and ironworks in the district. One of the most important places visited was the Strafford Main Colliery, where the Silkstone and Park Gate coal was worked. The colliery has been noted for many years for the large quantity of gas that oozed from the floor, and which on more than one occasion caused the men to hurriedly leave the pit. The outbursts of gas were graphically described by Mr. MILLER, the manager. He states that about 600 yards from the bottom of the shaft a bore-hole was made to prevent an outburst of gas. At that point so strong was the pressure that it was at the present time equal to 130 lbs. to the square inch. This was the case with respect to the Silkstone seam. The Silkstone seam, where the outbursts took place, was about 240 yards deep, the coal being nearly 6 ft. in thickness, including 6 in. of coarse coal, which is generally left at the bottom of the workings. On several occasions the floor burst up with gas close to the face of the benches, and was sufficiently powerful to foul a current of air in

the face equal to 10,000 or 12,000 feet per minute. On one occasion the floor was lifted up, and gas came out of a crack; this had extended under the solid coal, and the noise was something like that of steam blowing off from an engine; a hole 2½ in. in diameter and a gas-pipe of 1½ in. was put down some 7 ft., and in 35 minutes the gauge went up to 30 lbs. per square inch, and then within a few seconds of rending and disturbance the floor broke, and the gas spent at a crack 2 yards from the hole, the gauge going back to 19 lbs. In one experiment the register rose steadily to 101 lbs. per square inch, and was then rising. Mr. MILLER pointed out the necessity of the question of the outbursts of gas being more fully entertained than it is, so as to ensure some safety-valve by which such dangerous outbursts could be met. At the Mitchell's Main Colliery, about four miles from Barnsley, the visitors were made acquainted with the difficulties that had to be encountered in sinking. For a long time the water was so powerful that operations had to be entirely suspended. At last Mr. MITCHELL, jun., the managing director of the Worsbro' Dale Iron Company, was called in, and by his means the water was cleared out and the coal reached. At one time he had no less than four pairs of pumps constantly going. Farther on a halt was made at the Corton Shaft Colliery, about the largest in South Yorkshire, the principal shaft being 20 ft. in diameter inside the tubbing. At this place the coal has been reached, and the pulley-wheels, 15 ft. in diameter, made by NEEDHAM, QUALTERS, HALL, and Co., were exhibited at the entrance of the place of meeting at Barnsley. The Rockingham Colliery of Messrs. NEWTON, CHAMBERS, and Co. was inspected, where was shown a fine and complete section of the coal gone through in sinking to the Silkstone seam. A little further on the party came to the Hoyland Colliery, where the coal is being sunk to join the Barnsley bed to the Silkstone seam, under the superintendence of Mr. PEACOCK. Some interesting facts were given with respect to the work done, and the great future there was before those who had the enterprise to sink down so far to the finest seam of coal we have. Proceeding onwards, the party—which included Mr. J. ROSEBY, the principal agent of the vast ironstone field in North Lincolnshire—visited the extensive works of the Messrs. DAWES at Elsecar. Here they saw the mills and puddling furnaces at work, and several new inventions in operation. In another direction a party visited the Monk Briton, the Oaks, Lund Hill, and other collieries, particulars of which have from time to time appeared in the *Mining Journal*. During the day the linen works in the town were thrown open, and many of the visitors availed themselves of the opportunity of seeing how damasks and other fine linen fabrics were produced. Shortly after six o'clock in the evening a large number of persons sat down to dinner at the King's Head hotel, at which nothing that the most epicurean or sensitive taste could desire was wanting. At eleven o'clock at night a train was in readiness to take those persons who wished to Sheffield, and many of the northern gentlemen availed themselves of the opportunity of visiting the hardware town in the dead of night.

MINING NEWS OF THE WEEK.

Messrs. F. W. MANSSELL and Co. (Sworn Stock and Share Brokers) Pinner's Hall, Old Broad-street, write to us as follows:—

HYDRAULIC GOLD MINES.—Since gold was first discovered in California, now 25 years ago, the value of the precious metal produced has been 337,600,000*l.* In face of blind inexperience, untoward disaster, and almost overwhelming difficulty, this vast addition to the world's wealth has been obtained at an aggregate expenditure of 152,000,000*l.*, leaving a profit during the 25 years of 185,000,000*l.*, which, upon an investment outlay of 52,000,000*l.*, represents a profit of about 16 per cent. per annum from the date of the discovery of gold in California in 1849 until the present time. It is not our purpose here to speculate upon the effect this large accession of gold may have had upon universal commercial progress, but rather to indicate the superior claims hydraulic gold mines (which have yielded by far the larger amount of this metal) possess compared to deep mining in mineral veins. An old Cornish adage has it that "no miner can see farther into a vein than the point of his pick," and all know how often the anticipated "reserves," upon which calculations of profit are based fall short of well-founded expectations. But, on the other hand, suppose instead of a mineral vein we are considering at a few points by shafts and levels, the whole superficial area of the property could be seen and examined over an area of many acres, such as might be exposed if we could conceive the mine laid down in a horizontal position, and its upper covering removed and its thickness determined. This would reduce the chances of error and miscalculation in mining to a minimum, and certainty would take the place of comparative uncertainty. This is precisely what we see in hydraulic gold mining. The origin of this branch of mining dates back as far as the spring of 1852, and illustrates the old proverb that "necessity is the mother of invention." The crevice-knife and spoon had done their duty; the gold-rocker was generally displaced by the "Long Tom" and "Grizzly," and these again were superseded by long lines of sluice-boxes, and, *pari passu*, the fissures and crevices in the exposed or denuded bed-rock on the river banks were relieved of their gold nuggets; the shallow ravines were mostly worked out; rich gravel leads were followed into sides of hills or mountains, hiding themselves under apparently worthless masses of earthy matter, the height of the latter increasing with every step onward. Besides this increase in labour and decrease in pay, the frequent occurrence of accidents by the "caving" of banks urged the adoption of other plans for working. Tunnels and drifts were started in many places; shafts were sunk, and gold-bearing strata of gravel were found one below the other, the richness generally increasing in depth. Thus stood matters in the spring of 1852, and thus they must be left in this communication.

BLUE TENT CONSOLIDATED.—The latest information refers to the early completion of the aqueduct, by which the water power will be greatly increased, and with it the yield of gold. Beyond the facts previously stated, it may be mentioned that the actual result of working on a large scale both here and elsewhere in California shows the net profits of this kind of mining to be over 75 per cent. of the gross product. While the area embraced in this property is among the largest owned by any single proprietorship in California, it is in the midst of a well-watered, salubrious, and fruitful region, free from severe frosts and heavy snows, and where the average yearly rainfall is 60 in. The entire area of the property is within the limits of the Ancient River Channel, or Great Blue Lead, and in the region which of all others has been most celebrated for the uniform success of its deep gold placers.

SWEETLAND CREEK.—The "clean up," showing a net profit of \$8500, notwithstanding intermittent and failing water, is naturally regarded in the market as a significant forerunner of the results likely to accrue as soon as the rains shall commence. From April, 1874, to February, 1875, a gross product of 5522 ozs. of gold was obtained, realising 21,806*l.*, against a cost of 13,008*l.*, showing a profit of 8797*l.*; three dividends were paid, amounting to 6000*l.*, leaving a balance to credit of profit and loss of 2871*l.* This profit was in face of considerable hindrances; but, under the new contract entered into for a period of five years, there is reason to expect an almost immediate renewal of the success which has previously attended this company's operations. The telegram received last week (referred to above), showing a profit of \$8500 (1700*l.*), assures the next dividend of 2s. per share (1500*l.*), or equal to 10*l.* per cent. per annum on the capital of the company, for the quarter ending December, 1875. The superintendent expects to be able to continue washing the same as last run—that is, daytime only—until about Dec. 1, when he will make another clean up. By that date it is probable that the rains will have set in, and, if so, continuous washing day and night can be carried on. Everything about the mine is progressing satisfactorily.

SILVER MINES—RICHMOND CONSOLIDATED.—The two most recent reports from the manager appearing in the *Journal* would seem to have caused a considerable amount of uneasiness in the minds of shareholders. Now that weekly reports are properly enough published in the *Journal* it should be known that alterations in value, especially in a mine of this character, are always occurring, and shareholders should not allow themselves to be unduly elated at new discoveries, or depressed when the vein is reported to have narrowed

or "pinched up." Such variableness in value is, in truth, an encouraging feature—a lode that is ever changing in value, "bellying out" and "pinching up," is generally productive and permanent. We shall now begin to receive reports detailing the particulars of the extent and value of the discoveries already announced by cablegrams. If permitted to offer a suggestion upon such a subject, it would be that the manager ceases to write commentaries on the mine, furnishing simply a mine report. The unreliableness of commentaries on such matters has been already strikingly shown, as only four or five reports have been as yet published, and the facts now being announced are more encouraging for the present and still more for the future than the commentaries in the earlier reports were confusing, if not actually discouraging. The manager should no longer indulge in hopes and fears, as in all mines the fear of to-day may become the hope of to-morrow; let nothing be set forth but bald facts, leaving shareholders to form their own conclusions.

LEAD MINES.—For years we have pointed out in the columns of the *Journal* the many solid advantages of lead mines as remunerative investments. The paid-up capital of our principal lead mines amounts to 620,000*l.*, and the dividends already paid represent a sum of more than 2,000,000*l.*, and the aggregate market value at the present time is equal to about a similar amount. It is only as lead mines hitherto worked privately pass into the hands of public companies that we have any means of forming an opinion of their value as *bona fide* investments. The Van Mine, which passed into the hands of the present company some five years since, has already, upon a paid-up capital of 63,500*l.*, returned to the shareholders dividends to the amount of about 226,000*l.*, and commands a market value of about 420,000*l.*, the ore in sight having been estimated as worth not less than 2,000,000*l.* The Minera has, upon a paid-up capital of 45,000*l.*, returned to its shareholders dividends of 584,750*l.*, the market value of the property being 70,000*l.* Roman Gravel was acquired by the present company about four years since, and has already paid dividends of about 66,000*l.* upon a capital of 90,000*l.*, the market value of the property being about 144,000*l.* Tankerville has a paid-up capital of 72,000*l.* Before the property passed into the hands of the present company the profits did not exceed 1000*l.* per annum, but by the judicious expenditure of a small amount of capital no less than 48,000*l.* has been paid in dividends. One special feature in connection with lead mines—a feature by no means of small importance—is the high premium which the shares command in the market. Van shares (4*l.* 5s.) are selling at 2*l.*; Roman Gravel (6*l.* 10s.), at 1*l.*; and Tankerville (6*l.*), at 1*l.* Until the introduction of the Pateley Bridge Lead Mines and Smelting Works Company, with but few exceptions, the lead mines in the North of England have been worked by private capitalists, and not generally carried on upon a system to give the best results. Everything we have stated concerning this valuable group of mines has already been more than confirmed—their richness, extent, and dividend-giving capabilities are far greater than we had anticipated. The managers have been expressly directed not to raise any lead, but to vigorously continue the exploratory levels, laying open the mines solely with the view to place them in a condition of remunerative stability before commencing to make returns; but no less than 50 tons of lead is now in the bins obtained from drivages alone, the value of which is nearly equivalent to the outlay incurred on exploration. It has been stated that, with the mines opening out as at present, the returns in one year hence will be 100 tons of pig-lead per month, of the value of 2200*l.*, at a monthly cost of between 600*l.* and 700*l.* This will be equal to a net monthly profit of 1500*l.*, or 18,000*l.* per annum. The capital of the company is only 15,000*l.*, so that this would be equal to more than 100 per cent. per annum. There are several lead mines now in a progressive state, the shares in which can be bought at a low rate that may at no distant date be equally as productive and command as high prices as those now enumerated.

COPPER MINING IN DEVONSHIRE.

THE BELSTONE MINING DISTRICT.

High up in the middle of Devonshire a huge and extensive outcrop of granite forms the wild moors of Dartmoor, and fringing round this outcrop there exists a vast system of mineral lodes, which appear to follow the junction beds circumventing the entire area of the outcrop. First one metallic base predominating, and then giving place to another as their relative magnetic position to the granite becomes changed. At various points, north, south, east, and west, important and valuable mines have been worked, but it is only recently, as the deposition of mineral veins has become scientifically understood, that any attempt has been made to work the extreme northern junction beds, where the whole effect of the miles of Dartmoor granite would concentrate the greatest amount of copper ore. Science having pointed to the neglected spot between Sticklepath and Belstone, an investigation was made, and a huge gossan back discovered, which at the outcrop measured nearly 200 ft. wide. Mining captains looked at it, and said it was too big for a copper lode, and must be some iron course, but such backs have occurred before under similar conditions in South America, Australia, and other places. It was one of a series of parallel lodes running east and west, dipping north away from the granite, and intersected by seven north and south cross-courses.

A shaft was carefully placed to cut the big lode at about 100 fms. in depth, at which point it was calculated that this lode would sober down into something like moderate dimensions, and give a solid rib of yellow ore. In sinking the shaft and driving the 30 fm. cross-cut to the big lode three lodes were cut, all carrying good stones of yellow ore, and if the big lode had not been in the sett these would, no doubt, have been worked upon with profit. However, when the big lode was cut large bunches of rich black copper ore spotted with yellow were found, and from the 30 to the 50 cross-cut some thousands of pounds worth of copper ore have been sold. The main shaft is now down 81 fms., and a cross-cut is being driven to cut the great lode at that depth, which will give valuable backs up to the 50 fms. The cross-cut which is now being driven at the 80 is composed of decomposed quartz, garnet, and branches of rich yellow ore with arsenical iron, and there can be no doubt from these and other favourable indications that the great lode at this depth is becoming more highly mineralised, and is saturating the surrounding strata, the effects of which are even now to be seen at this distance from it, as the ground is getting softer, and spotted with ore, &c.

The intersection of this great lode by this cross-cut is a matter of very great importance, not only to the shareholders of the Belstone Mine, but also to the proprietors of the surrounding country.

Within the past fortnight, in sinking the main shaft, some very rich yellow ore was discovered in the cross-course at the bottom of the shaft, which has fully supported all that was predicted for this mine from the first, and the calculations that were made at surface before the ore was seen.

The Belstone sett is a very large one, and includes several miles upon the run of these extraordinary lodes, and the sites of four distinct shafts have been marked out for future workings. One of these, the western or B shaft, has been sunk to 23 fms., at which depth No. 3 lode—one of the northern parallel lodes—was cut in the bottom, and some splendid yellow ore obtained.

About 100 fms. south-west of this shaft the great cross-course intersects the big lode, at which point a series of very large bunches of black and yellow ore will be found of great bulk and value. A wheel and line of rods might be erected higher up the valley of the Taw to work this part of the sett.

Looking at the highly encouraging appearance of the ground in the bottom of this B shaft, and the rich stones of yellow ore which were obtained from it, it seems extraordinary that the present proprietors of these mines should have left this part of their property so long untouched. There can be little doubt that the prosecution and development of the mines at this point will yield great and valuable results; at the same time, the works now being carried out at the main, or A shaft will open up vast deposits of mineral, both at the intersection of the great lode by the present 80 fathom level cross-cut, and when the shaft is sunk deep enough to cut the lode at about 100 fms.

It is very difficult to estimate the value of such an extensive mineral estate as that possessed by the Belstone Mining Company.

there being plenty of room for several large mines in ground which has not yet been broken, but where the big lode is seen at 100 fms. in depth, settled between two regular walls, as it will no doubt be, then this young undertaking will increase immensely in value. The mine having thus far proved all that was expected, there can be no doubt, looking at the very favourable indications now met with, that a brilliant and successful future is in store for the proprietors.

PRACTICAL TREATISE ON COAL MINING.

A large and handsome volume, designed for the use of engineering students intending to devote themselves to the coal mining branch of the profession, has just been issued by Mr. G. G. ANDRE, of Craven-street, and judging from its contents there can be no question that the complete work will be very useful to the class for which it is intended. Peculiarities being met with in almost every district, special modes of procedure have to be adopted which are frequently inapplicable beyond the particular locality in which they are employed, the natural consequence being that general treatises are of little practical utility, and that whenever generalisation is attempted the propagation of very erroneous notions almost invariably results. Yet it must not be supposed that those who undertake to place within the reach of the practical man an account of what is being done by those similarly engaged in other districts and in other countries do not perform an important service, and Mr. André's work will assuredly be appreciated by many who would not accept of his views as orthodox. Mr. André has evidently endeavoured to give himself of the best possible sources of information, and to give a faithful account of present practice. He does not rely upon his personal experience, which, as he truly states, would have rendered the work a mere vehicle of personal opinion, but to the experience of a district, which would have limited its usefulness; nor has he hesitated to introduce methods from France, Belgium, and German practice when they have appeared to be applicable either in their entirety or in a modified form to the conditions which exist at home.

Admitting that a certain amount of geological knowledge is essential to the mining engineer, Mr. André devotes the first 50 pages of his book to an outline of the geological science, so framing it that it shall be of equal utility to the English and the American reader. In explaining the mode of occurrence, composition, and properties of coal he makes some statements which the poor deluded practical men who have derived their knowledge in the vicinity of collieries will regard as startling, but he informs them that "though coal is found in several parts of the world, among the different periods of the geological system, as he shows by his tables, the Devonian and Carboniferous periods (the period, as he shows by his tables, the Devonian and Carboniferous periods of the Upper Palaeozoic epoch), so called on account of the occurrence of abundant coal deposits. For in no other period are the deposits of sufficient extent or of sufficient quality to be commercially valuable. Hence searching for coal in any other formation is a labour holding out but faint hope of reward, and discoveries of deposits in such situations merit but little attention from a practical point of view." Many of the books published a century or a century and a half ago are equal to those now written, but as this is not the case with respect to coal mining, it might have been supposed that Mr. André would have adopted some more modern view. Another startling announcement is that "brown coal, or lignite, is a term applied to all coals occurring in formations more recent than those of the Carboniferous period. The processes of mineralisation have been less completely effected in these later coals, they exhibit their vegetable structure more completely, and as an effect of the same cause they retain a much larger proportion of volatile matters." Referring to coke and coking, he states that "it is of little value unless it can be obtained in large prismatic pieces," and he considers that "by the application of large quantities of water (when the coke is drawn) evils are avoided of the first magnitude in the economical working of the smelting-furnace." The chapters on searching for coal and shaft sinking contain the usual information as to considering price of labour and the question of finding a market for the product, and give descriptions of shovels, picks, &c. His views upon rock-drills are, to say the least, peculiar; the Dabois-François, one of the most successful in practice yet brought into the market, is placed last in the order of merit in a list of eight, and the drills to which he has given the places of honour are precisely those which when applied in practice have either worked but inefficiently or have required so much modification as to become almost new inventions. This is readily accounted for by the fact that his information is evidently drawn from German sources, and that the actual work done by the several machines, taking them for a whole, is, in unknown to him; practical men, however, will be able to take his statements upon such matters for what they are worth. He also differs in opinion from most of those who have had experience in the matter in preferring the Blauz to the Collidon compressor, but since many of the most remarkable and most complicated contrivances from expansion gear to rock-drills have been adopted by Blauz many with German predilections would prefer the Blauz arrangements. Mr. André is of opinion that the "E. S. M." blasting powder of Messrs. Curtis and Harvey is equal in explosive force to dynamite when fired in a suitable manner, and that, of course, it is to be preferred by experience. His principal liking, however, is for Brain's powder, a kind of factitious Holsley's powder, and he remarks that it is "of course greatly superior to dynamite, which has an uncombustible base," but this is another statement which requires confirmation by facts. With regard to difficult works accomplished, Mr. André refers to the Dawson winning, in the Helton district of the county of Durham, as being the most arduous and costly on record; it was commenced in 1838, and the Hutton seam was reached in 1843. It appears that 8½ fms. of kyle and had to be driven through. As Mr. André does not mention the Kyles, it is not only referred to by practical men as the greatest feat in shaft sinking, it would be well if he would furnish the details of the Ryphos, and show wherein the sinking of the Dawson exceeded it in difficulty. This information from a practical engineer would be of great interest. The subjects to be treated of in future volumes are systems of working, getting the coal, haulage, winding, drainage, ventilation, accidental operations, surface works, management and accounts, and the characteristics of the coal fields of Great Britain and America, so that it will be at once seen that the author intends to make his book complete to the utmost of his power; and since in the volume now under consideration he has displayed undoubted tact in putting his material together, it may fairly be anticipated that the work when finished will form a very valuable contribution to mining literature; but useful as will be the information given in the body of the book, it will be even surpassed in utility by the very large number of excellent illustrations which accompany it. An enormous amount of labour must have been involved in the production of the work, but Mr. André may well congratulate himself that that labour was not been wasted.

"A Practical Treatise on Coal Mining." By GEORGE G. ANDRE, F.G.S., A.I.C.E. London: E. and F. N. Spon, Charing Cross.

DICTIONARY OF CHEMISTRY.

Owing to the constant progress of discovery in connection with the science of chemistry, the periodical revision and extension of even the most complete and reliable work of reference to which the English chemist can turn—Watts's Dictionary of Chemistry—is absolutely necessary, and the Second Supplement* thereto, just issued, leaves no doubt that the author has determined that by keeping up the information to the latest possible date his book shall continue to maintain the high reputation it has hitherto enjoyed; and he has evidently availed himself to the utmost of the unusual facilities which his position as Editor of the Journal of the Chemical Society gives him for ascertaining the minutest details connected with any given chemical discovery. To furnish anything approaching an estimate of a dictionary, and especially of one considerably more than 1200 pages in extent, is, of course, out of the question, but it may safely be said that whatever branch of industry a man may be engaged in he will find so much information capable of being turned to practical account in the work now under notice that he will soon find the ten guineas well expended in acquiring it. As much interest has recently been taken in the question of the substitution of nickel alloys for copper as a coinage metal, and as owners of nickel and cobalt mines have for some time past looked forward with some anxiety to the change, in the hope that it would increase the value of their property, it will not be uninteresting to ascertain from an authority what progress is being made in that direction.

The nickel coinage of Switzerland is at all attractive in appearance cannot for a moment be urged, but since it is less weighty than bronze coinage of equivalent value may suffice to recommend it to those whose dealings do not extend far beyond pence and halfpence. Much more has doubtless to be done before the best of the so-called nickel coinage is discovered, but it would seem that the removal of the cobalt with which the nickel is so commonly associated would be a great step of advance. Referring to the physical properties of cobalt, the reader will find in the Dictionary that, according to Valenciennes, cobalt after fusion and rolling the aspect of polished iron; it is harder, but may be rolled into spiral bands like good iron. With regard to the alloys of cobalt with copper he finds that with cobalt forms ductile and malleable alloys, which fuse at about the melting point of copper. Again, in the article on nickel the electrolytic deposition of nickel is explained; it consists in throwing it down from a bath containing only sulphate or chloride of nickel, and free from every trace of fixed alkali, as the presence of these latter give rise to the formation of nickel peroxide, and further on it is remarked that cobalt may be precipitated upon metals in the same manner, but the deposit is not so beautiful as that of nickel, and it is more easily attacked by the air. According to Rösler's analyses of alloys of nickel, the so-called white copper which has been prepared in Suhl for about 100 years contains 88 per cent. of copper with 8½ per cent. of nickel and 1¼ per cent. of iron. A Parisian alloy distinguished by its capacity for polishing and gilding was found to contain—copper, 65; nickel, 18; zinc, 13; and iron, 3½ per cent. Two specimens of Chinese packfong gave one, copper, 43; nickel, 15; zinc, 40; and the other copper, 40; nickel, 31; zinc, 28; and iron, 2 per cent. An alloy used for knife handles contained, copper, 55; nickel, 20; zinc, 25; and a somewhat similar alloy used for forks contained—copper, 50; nickel, 25; and zinc, 25 per cent. In many countries alloys containing nickel are used for small coins, and in the United States an alloy of 88 per cent. copper with 12 per cent. nickel is used for very handsome little coins, which are used as a substitute for bronze.

Turning to the articles on explosives and gunpowder, in which a large number of the readers of the Journal are interested, an enormous mass of useful information will be found. On comparing nitro-glycerine with gunpowder, it will be seen

that if a given weight of nitre were converted into the exactly equivalent weight of nitro-glycerine it would in a blast develop three times as great a pressure as would be produced by the gunpowder made with the same quantity of nitre. Dynamite is found to be a less bursting or breaking power than nitro-glycerine; this is explained by the intervention of the inert material, which shares with the nitro-glycerine the heat developed by the exploding shock. Thus silica and alumina have nearly the same specific heat as the gaseous products of the explosion of nitro-glycerine, the volume being constant; if, therefore, equal weights of nitro-glycerine and either of these substances be fired in a space filled by the mixture, the silica or alumina will absorb half the heat, and proportionally reduce the pressure. As to the substitution of sodium nitrate for potassium nitrate in the manufacture of blasting powder, it is remarked that powder containing sodium nitrate was largely employed in excavating the Suez Canal, and with considerable economy; for experiment shows that the substitution of sodium for potassium in any definite salt occasions a nearly constant disengagement of heat. As the alkaline metal exists as a salt both before and after the explosion, this influence is eliminated if the quantity of heat be calculated for equivalent weights of sodium and potassium salts, but with equal weights the volume of gas and the heat, consequently the total work done will be greater in the case of sodium nitrate, the equivalent of sodium being lower than that of potassium.

In the same way those interested in the extraction of gold or silver from their ores will find reference to all the leading processes which have been brought forward and tested since the publication of the previous supplement, no matter whether the descriptions have been originally published in English, French, German, Italian, or American prints. In the article on iron the researches of Bell, Snellus, and others are duly noticed, the information being given so concisely that their conclusions can be ascertained with the utmost readiness. Analin, alizarin, electricity, magnetism, manure, muscular tissue, light, heat, phenol derivatives; in fact, whatever element or substance, whether organic or inorganic, has received the attention of the chemist appears to be duly referred to, the value of the notice being much enhanced by the indications given when necessary to more elaborate treatises on the subject under consideration. The Dictionary is alone a thoroughly useful substitute for a very complete chemical library.

THE RAILWAY JUBILEE.

Could the world at the present day be suddenly deprived of railways most of the inhabitants of civilised countries would be inclined to regard life as unbearable, yet the recent festivities at Darlington, of which Mr. J. S. JEANS has furnished an interesting memorial,* affords an effectual reminder that but half-a-century has elapsed since the first public railway was opened, and when the only railway advertisement offered for the edification of travellers was—

STOCKTON AND DARLINGTON RAILWAY.

THE COMPANY'S COACH

CALLED THE

EXPERIMENT.

Which commenced Travelling on MONDAY, the 10th of October, 1825, will continue to run from Darlington to Stockton, and from Stockton to Darlington every Day [Sundays excepted], setting off from the DEPOT at each place at the times specified as under (viz.)—

ON MONDAY,

From Stockton at half-past 7 in the morning, and will reach Darlington about half-past 9; the Coach will set off from the latter place on its return at 3 in the Afternoon, and reach Stockton about 5.

ON TUESDAY,

From Stockton at 3 in the Afternoon, and will reach Darlington about 5.

ON WEDNESDAY, THURSDAY, AND FRIDAY,

From Darlington at half-past 7 in the morning, and will reach Stockton about half-past 9; the Coach will set off from the latter place on its return at 3 in the Afternoon, and reach Darlington about 5.

ON SATURDAY,

From Darlington at 1 in the Afternoon, and will reach Stockton about 3. Passengers to pay 1s. each, and will be allowed a Package of not exceeding 14 lbs., all above that weight to pay at the rate of 3d. per Stone extra. Carriage of small Parcels 3d. each. The Company will not be accountable for Parcels of above 45 value, unless paid for as such.

Mr. Richard Pickersgill at his Office in Commercial-street, Darlington, and Mr. Tully, at Stockton, will for the present receive any Parcels, and Book Passengers.

Thus half-a-century ago it was found practicable to convey passengers 25 miles for 1s. for a single journey, yet owing to the infamous manner in which railways have since been constructed and managed, the companies now find it necessary to demand double that rate for the same accommodation. Mr. JEANS observes that the Stockton and Darlington line—the only 25 miles of public railroad open in the world—was constructed at a cost of less than 150,000, whilst it is estimated that there are now constructed 160,000 miles of railway, which, at an average cost of 20,000 per mile, represents a total of 3,200,000,000 sterling. Then there were only two locomotive engines available for use on a public railway; now there are 50,000 locomotives in use, representing a total power equal to 10,000,000 horses. In 1844, when we fairly got into the railway era, the gross annual value of the lands, railways, canals, &c., of Great Britain was only 95,302,248. In 1873, and mainly in consequence of the development of railways, it had increased to 212,922,851. Incomes from trades and professions have advanced during the same period with equally remarkable strides—their gross annual value being 65,095,191. In 1844, and 197,237,338. In 1873. It will be admitted, as Mr. JEANS remarks, that a connected and accurate account of the Stockton and Darlington Railway has hitherto been a want in railway literature. Not but what something is generally known of the antecedents of that undertaking. Fugitive and fragmentary notices of it have from time to time appeared in newspapers, magazines, and even in works of a less ephemeral character, but none could claim to be an authorised history of the undertaking; and most of them written at a distance from the cradle of the railway system have almost necessarily lacked completeness, and accuracy.

But the great value of Mr. JEANS's book results from the unusually favourable conditions under which it has been written. The directors of the Stockton and Darlington Railway have authorised and afforded all the necessary facilities for the publication of the volume, primarily with the view of furnishing a suitable souvenir of the jubilee, but ultimately to enable those who are interested in the subject to know something more than otherwise could be known of the beginnings of the railway. The author tenders his best thanks to Messrs. Edmund Backhouse, M.P., Henry Pease, David Dale, J. E. Mooney, Hugh Dunn, John Gless, and others, for the aid they have rendered in furnishing the materials of which the volume is composed. All the requisite material being placed at his disposal, Mr. JEANS lost no time in moulding it into shape, and although he mentions that the time allowed him for the work was very limited, he has certainly performed the task in a very creditable manner. He first sketches the views entertained with regard to railways previous to their construction, and then describes the dawn of the new era, the preliminaries to the construction of the first public railway, the beginning of the railway, the progress of the arrangements, the first Railway Acts, the opening, early difficulties, and so on. Next he gives a series of brief biographical sketches of the pioneers of the railway system; devotes a chapter to the history of Darlington itself, and concludes the volume with a series of valuable appendices affording documentary evidence for many of the facts stated.

As an addition to our railway literature Mr. JEANS's volume is really invaluable; no previous writer can claim to have had such exceptional facilities offered him by the very men best acquainted with the subject for supplying reliable information concerning details connected with the inception of railways, and before known only to the favoured few, whilst the manner in which he has constructed the abundance of facts before him into a highly interesting and very readable book will be appreciated by all who desire to know from what a modest source that railway system which has revolutionised the whole civilised world originally sprang.

"Jubilee Memorial of the Railway System. A History of the Stockton and Darlington Railway, and a Record of its Results." By J. S. JEANS. London: Longmans, Green, and Co.

TOOLS AND MACHINERY.—A handsome illustrated catalogue and price list of engineers, smiths, and gasfitters tools and machinery, agricultural and household implements, &c., has just been issued by Messrs. M. SELIG, jun., and Co., of Queen Victoria-street. As the catalogue embraces a large variety of appliances, from drilling, punching, and shearing machines to oil cans, and as the prices appear to be as low as is consistent with good workmanship, the firm will, no doubt, find that it is appreciated by purchasers. In view of the approaching compulsory use of the metric system, the most advantageous reform introduced in the English commercial system for many generations, it is gratifying to find that Messrs. Selig and Co. are offering kilogramme letter balances from 6s. 6d. per dozen upwards, and family scales at an equally reasonable price. The catalogue is a very creditable production, and should be perused by the trade generally.

IMPROVEMENTS IN VALVES.—The invention of Mr. W. MANN, of Blackfriars-road, and Mr. S. OWENS, of Whitefriars-street, relates particularly to the improvement of that class of valves commonly called slide or sluice valves, which are applicable for gas, water, steam, and other liquid and fluid purposes. When the slide is moved by a rack and pinion, the improvement consists in casting on one or both sides of the rack projections with inclined or by preference plane surfaces. On one or both sides of the pinion and upon the same spindle is fixed a cam or eccentric, so arranged that one or both may bear upon the projections before mentioned when the slide or sluice is shut. When the valve is open, and it is desired to shut it, a lever is applied to the spindle and turned so as to rotate the pinion gearing in the rack, and cause the slide or sluice to pass over or on to its seat, and at the same time bring the projections under the cams, and so produce a pressure upon the slide to force and maintain it tightly against the seat until intentionally released. To open the valve the spindle is, of course, turned the reverse way. A limited effect of the same kind may be produced by reducing the depression between the teeth near the ends of the rack and causing the teeth to bottom. When the slide is actuated by a screw motion, the same is in the same spindle as the cam or eccentric, and the projections for the cam or cam to bear on when the valve is shut, at which moment the projections come into the position to catch the pressure of the cams. It is also proposed that in valves, which are operated by a screw, curved projections shall be cast on the back of the slide or sluice, and on the body of the valve corresponding projections shall be cast which will come in contact with the projections on the back of the slide when the valve is being closed, and will have the effect of forcing the slide against the face or seating when it covers the opening on the valve. To assist in opening the valve a spring or springs may be fixed on the front of the slide.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

BLACK ROCK COLLIERY COMPANY (Limited).—Capital 25,000, in shares of 25. 10s. each, of which 8000 will be allotted to vendors as fully paid-up. To acquire a colliery at Pontypridd, Llancaiarn, Glamorgan, referred to in an agreement made between Thomas Thompson of the one part, and W. H. Harrison, 1, Palmerston Buildings, the subscribers (who take one share each) are—J. Thompson, 1, Palmerston Buildings, no occupation; W. H. Harrison, 3, Grove Villas, Acton; Thos. W. Jones, 335, Gresham House, shareholder; W. B. Cobb, 62, Cornhill, merchant; J. L. Jones, 15, Nevill-road, N.; W. J. Tallentire, 20, Change-alley, stockbroker; J. Zalmanson, 62, Cornhill, merchant. The directors are—Messrs. E. Chilcott, J. Oulpar, and Major P. W. S. Ross, and they shall be entitled to set aside for their remuneration a sum equal to 5 per cent. of the amount applied to dividends, but in any case the remuneration is not to be less than 1000 per annum for each director. The qualification for future directors is to be the holding of 100 shares.

LYFNANT SLATE AND SLAB COMPANY (Limited).—Capital 55,000, in 55,000 shares. To acquire the lease of a quarry, known as the Lyfnant, situated in the parish of Llanegwrog, Montgomery, according to an agreement made between W. H. Charlton of the one part, and G. Turner of the other part. The subscribers are—M. M. E. Tahourdin, 151, St. George's-road, Camberwell, solicitor; Ernest Spron, 16, Craven-street, Strand, mining and civil engineer; W. H. Charlton, 9, Gracechurch-street, public accountant; G. J. Cowley, Oxford-terrace, Peckham, accountant; G. Turner, 22, Grange-road, N., secretary; 5, Arthur Brown, 35, Derby-road, Croydon, accountant; 5, and T. R. Eames, St. Michael's House, merchant, 5. The directors are—Lieut. Colonel Elton, V.C.; T. R. Eames, S. C. Wallace, and W. H. Charlton, the remuneration being 5000 per annum.

MIDLAND COUNTIES (IRELAND) DISTILLERY COMPANY (Limited).—Capital 100,000, in 100 shares. To carry on business as distillers, &c. The subscribers are—J. H. Weston, 8, Albert-square, S.W.; W. H. Charlton, 9, Gracechurch-street; Arthur Brown, 35, Derby-road, Croydon; W. Sharroett, 8 and 7, Coleman-street; W. Tallant, 9, Union-street, St. George's-road; M. M. E. Tahourdin, 151, St. George's-road; and T. Kempton, 2 and 3, Barnard's Inn.

BINGLEY EXHIBITION HALL COMPANY (Limited).—Capital 20,000, in 100 shares. To acquire the Bingley Exhibition Hall, Birmingham, for exhibition purposes.

THE HOTEL KEEPERS' ASSOCIATION (Limited).—Capital 2000, in 50 shares.

TALYBONT SILVER-LEAD MINING COMPANY (Limited).—Capital 30,000, in 10 shares. To acquire from Mr. E. Hilton the Talybont Silver-Lead Mine, at Talybont, Cardigan. The subscribers (who take one share each) are—James Grieves, 43, Ironmonger-lane, merchant; G. D. Neame, 7, East India Avenue; C. Routledge, 9, Sydenham Park, Sydenham, merchants' clerk; F. H. Koch, Dunster House, merchant; E. H. Cairo, 72, Gracechurch-street, merchant; E. R. Bonquet, Seven Sisters-road, N., merchants' clerk; and W. H. Bennett, Leadenhall-street, merchant. The directors are not yet appointed.

GUNNLSLAKE GRANITE COMPANY (Limited).—Capital 12,000, in 200 shares. To acquire granite properties at Gunnislake, Calstock, Cornwall. The subscribers are—J. H. Weston, 8, Albert-square, S.W.; W. H. Charlton, 9, Gracechurch-street; Arthur Brown, 35, Derby-road, Croydon; W. Sharroett, 8 and 7, Coleman-street; W. Tallant, 9, Union-street, St. George's-road; M. M. E. Tahourdin, 151, St. George's-road; and T. Kempton, 2 and 3, Barnard's Inn.

BLOOMER AND COMPANY (Limited).—Capital 30,000, in 100 shares. To acquire the business of Messrs. Caleb Bloomer and Co., of 12, George-yard, Lombard-street. The subscribers are—J. B. Cumming, 32, Great St. Helen's; L. H. Webber, Park-road, Redhill; S. W. Baird, 8, Avenue-road; A. Bloomer, 19, Laurence Pountney-lane; 5; H. Bloomer, 18, Laurence Pountney-lane; 5; Alfred Harrison, 17, Gracechurch-street; J. Smith, Hill Top, West Bromwich, 1.

MOOR BROOK MILLS COMPANY (Limited).—Capital 50,000, in 50 shares. To carry on business as cotton spinners, &c. The first seven subscribers are—Robert Grime, Preston, 300; Thomas Livesey, Church, 300; G. Parkinson, Blackburn, 300; J. Green, Livesey, 300; J. Tomlinson, Darwen, 300; E. Homer, Blackburn, 30; and W. Taylor, Accrington, 300.

BRISTOL PAPER COMPANY (Limited).—Capital 50,000, in 100 shares. To carry on business as paper manufacturers, and to manufacture paper according to improved methods. The subscribers (who take one share each) are—T. W. Rankin, Northwick Villas, Clifton; H. Taylor, 7, Windsor-terrace, Clifton; E. J. H. Cox, Leaford Villas, Cliftonville; F. W. Rankin, Northwick Villas, Clifton; L. H. Rankin, Northwick Villas; J. Holiday, Bristol; and G. J. Hobbs, 14, Clare-street, Bristol.

LONDON AND WESTMINSTER SUPPLY ASSOCIATION (Limited).—Capital 200,000, in 20,000 shares of 10s. each, and 100,000 of 1s. To supply goods on co-operative principles. The subscribers, who take one share each, are—J. F. Harold, Woodlands, New Forest; J. W. Morse, 34, St. Martin-street; R. W. Milner, Norfolk-road, Dalston; M. Moseley, Bancroft, Hitchen; Robt. Fell, 16, Glasshouse-yard; R. W. Lewis, 7, Queen Victoria-street; W. T. Frost, Heward-hill, Green.

UNWIN AND ROBERTS (Limited).—Capital 40,000, in 50 shares. To acquire the Globe Cutlery Works, Sheffield. The subscribers are—Philip Unwin, Globe Works, Sheffield, 100; P. H. Unwin, Globe Works, 100; H. E. Hoole, Sheffield, 100; H. Seeborn, Sheffield; H. Lodge, Barnhill, Barnsley, 100; J. R. Manning, St. Norman's, Forest Hill, 100; Robert Payne, 39, Lothbury, 100.

OSWALD TWISTLE POTTERY COMPANY (Limited).—Capital 10,000, in 50 shares. To acquire lands and carry on a pottery business at Broughton Barn, Oswaldtwistle, Lancashire.

EREWASH RAILWAY AND COLLIERY GREASE AND OIL COMPANY (Limited).—Capital 50,000, in 50 shares. To carry on business as oil and grease merchants.

BRADFORD BANKING COMPANY.—Constituted by deed in 1827, is now incorporated as an Unlimited Company.

THE OPENING OF THE BUSINESS SEASON.

Proverbially October is the opening business month of the year, the long nights making irksome to the London man of business continued residence at the seaside or in the country. It is the month, too, wherein country people count the cost of residence at southport, Weston, Tenby, Scarborough, Ryde, and other places, and resolve on something to replace the moneys spent in pleasure. What, then, is the prospect for money-making for town or country? The general trade of the country continues dull, although various branches, as the shoe trades of Yorkshire, the hose trades of Leicester and Nottingham, the shoe trades of Leicester, Northampton, Norwich, and Bristol, and the small arms trade of Birmingham are working overtime in the hope of keeping right with contracts, and of getting rid of long-standing orders. Indeed, if Leicester may be taken as representative of the other towns, these towns collectively have contributed largely to the apparent trade activity of the country for many months, as it is said that Leicester has not known a dull time for the past 12 years, the trade originally in hose having been supplemented by the trade in boots and shoes, at the time when the Civil War in America withdrew America from the export boot and shoe trade. Be this as it may, it is satisfactory to reflect that large bodies of the population are making money; on the other hand, as regards the general trade of the country, the most hopeful assurances are to be gathered from the abundant harvest; next from the now reasonable prices of coal and iron; and, finally, from the prospect of war on the Danube and China. The abundant harvest, gratifying as it is to ourselves, has been exceedingly disappointing to the United States, for one of the great hopes of trade revival there was in a bad harvest here. With a bad English harvest there would have been higher prices for wheat and Indian corn, and these higher prices would have enabled the American farmer to pay his debt to the shopkeeper. Now the present of the United States is cheerless—a fact of much importance to investors, as it points to no improvement in the traffic returns of the American railways. By our lucky harvest the prospects of the United States and the Canadian railways become, in fact, desperate; and it may as well be added that a new disturbing element has already entered into United States politics—that of the election of a successor to President Grant. Until after the presidential election next year there will be no permanent improvement in things American.

With the low prices of coal and iron as furnishing the inducement so long sought by many industries, it would seem that the sole remaining want for a trade movement is a return of confidence among bankers. The bankers have much reason to distrust the ordinary trade bills offered to them for discount; but then it is from the discount bills that they earn the major part of their profits, so that it is not probable that they will hold out much longer against their own interests. And if to this expectation the other of war is added, the presumption is that the year will not close without redeeming itself from the imputation of being one of the worst business years on record. War on the Danube means a considerable ready-money demand for material except provisions; food of all sorts being most abundant in that part of Europe. But clothing, boots and shoes, small arms and ammunition, batteries, knapsacks, tents, medicines, and many other things must be sought in London first, and afterwards in the best markets in the kingdom. War in China means much more; the preparation of army, navy, and hospital stores in large profusion, and the employment of ever so many ocean steamers in the coal and transport trade. Of course no one desires to see or to hear of bloodshed, but at present there is reason to believe that the peace of Eastern Europe will not soon be settled otherwise, and that as regards China that country is fast assuming a position that will be intolerable to Europeans. An English war with China means nothing less than the annexation of the province of which Shanghai is the chief seaport, and the opening to commerce of the hundreds of Chinese seaports that at present are the retreats of pirates.

On the whole, the opening of the business season is favourable for investment by all classes with money in their hands. The bad state of trade presents the home railway traffic returns at their worst, and, therefore, with each step in the improvement of the general trade and commerce of the country the traffic returns will improve, and at the same time the Stock Exchange quotations of railway securities will improve. Railway investments should now accordingly be made. This recommendation applies equally to Canadian and United States railways, although great care must be taken in investment in these; the fault in chief of the Canadian and United States railway system being the jobbery of their origin, and the continued jobbery of the branch lines and the amalgamations. At a fair valuation the railways of Canada and the United States are worth from 7s. 6d. to 10s. in 1s., not a penny more even prospectively; hence the desirability of good advice before investing. Many English mining properties have been depreciated to an extraordinary degree by the badness of the times, and thereby present good chances for the future. Spanish and some other foreign mines are in a like condition, and deserve attention. But, as our readers know, mining properties are risky at all times without trustworthy special information. We at all times are in a position to make recommendations as free from risk in mining as in any other industrial enterprise. A mine may be disappointing, but there is no reason why it should be more so than the operations of any limited company. As for foreign bonds, they will still further decline in public favour as a consequence of the publication of the evidence of the Select Committee of the House of Commons, on which the report was founded. The exposure is most damaging to the professional class, whose sole rule of action seems to be to make money honestly if possible, but to make money. —From W. J. Tallentire and Co.'s London Investment Circular for October.

Meetings of Public Companies.

JAVALI COMPANY.

An extraordinary general meeting of shareholders was held yesterday, at the Cannon Street Hotel. In the absence, through illness, of Mr. Henry Sewell, the chairman of the company, the chair was occupied by Admiral Sir LEOPOLD GEORGE HEATH, K.C.B. The notice calling the meeting was read by Mr. Edward Schubert. The directors' report was taken as read.

The CHAIRMAN said: Gentlemen, I must, in the first place, express my regret, and the regret of the board, in which I am sure you will all join, at the continued illness of Mr. Sewell. Gentlemen, we have called you together in accordance with the understanding come to at the last annual meeting, and we have submitted to you a report which we hope you will consider very satisfactory. I, myself, am rather tired of the sanguine speeches to which we have been accustomed to listen on these occasions, but I really feel I should be wanting in my duty if I did not add, on this occasion, one more to the number. I ground my sanguine hopes upon the fact that we have now got the ten additional stamps, of which we have heard so much in the last two years, actually at work, that we have a large steam engine capable of working the whole thirty stamps, actually at the mine; and we, therefore, have the means, provided labour does not fail, and provided there are no more revolutions in the country, we have the means of continuous working throughout the year, and continuous working means, I hope, monthly remittances of, put it at least, 1500*l.* a month. You will see from the report that in the last six months we have had gross returns exceeding those of the corresponding six months of last year by about 2500*l.* I have here a financial statement made up to Oct. 15th of last year, and also up to this day. On Oct. 15, 1874, we had, in the shape of money here, and at the mine, and remittances on the way, 3655*l.*, and we owed on bills and various other items 4617*l.*; at the present moment we have in money here, and at the mines, and remittances (which have been telegraphed to us but not yet received) 3450*l.*, whilst the total of our liabilities on bills accepted, interest on debentures, and so on, is 1700*l.*; the result is that whilst on this day last year we were 961*l.* to the bad, to-day we stand 1760*l.* to the good, making a total difference between the two periods of 2711*l.* We have had, during the last six months, advantages which none of our predecessors have had, we have had ready money at our bankers, and we have made use of that advantage to the best of our ability. We have initiated a system of sending money to the mine which will, I think, result in a saving of 500*l.* or 600*l.* a year; we have also initiated a system of making purchases ourselves, which will save us on our heavy machinery and other items probably 30 or 35 per cent., which you have hitherto paid to your commission agent. I think that you will give us credit for having done our best for you during these six months. I really should not have mentioned the savings which the board has effected in the last six months. I should not have brought them prominently before you, but that we are accused in a circular which has been sent round to you of asking for remuneration out of proportion to the value of our services. I wish you really to understand that we are not the drosses, nor what we call in the Navy "Queen's hard bargains," which the gentleman who signed that circular seems to think we are. You will observe that the turbine-wheel has broken down, or partially so, for we do not know the details of the accident. On receiving that news we immediately put ourselves in communication with the manufacturer, and eventually I went down to the works in Lancashire, and I told the manufacturer we really felt that we had a money claim against Mr. Hughes, who supplied the wheel to us, and probably he would fall back upon us; but I would waive all claim upon them, provided they would work right away and pay to a wheel sent out by the coming mail, and we have received a telegram from Southampton saying it is shipped on board the Nile. I now come to the subject of the "tailings," which is one of the greatest interests to us. You have seen, probably, the telegram in the newspapers that these tailings, or rather the result of the assay of these tailings, shows that they contain 1 oz. of gold and 39 ozs. of silver per ton. The history of these tailings is one dating a long time back. I find the first mention of them in a joint report by Messrs. Leeman and Sohus, in 1871, in which they first mention the tailings, and they proposed to set up a tailing mill. The next time they dropped in in a report from Capt. Johns, dated April, 1873, stating, "After some time we shall have our produce further increased by the erection of the tailing-mill, which I calculate to give a result of 100 or 150 ozs. of gold per month." And when the Chairman called you together and asked you to subscribe for debentures, he enumerated the various things upon which the money would be spent, and amongst these he mentioned the tailing mill. He asked for 5000*l.*, and you gave him 2700*l.*. There the subject dropped, but it has been revived by the present board. When I joined in April last I wrote to Capt. Sohus a private letter asking for information upon a great variety of subjects. Amongst them I asked—"Are you perfectly sure that all there is in the tailings, and that you are not losing by getting them?" His answer was to this effect—"I am perfectly satisfied with our assay, and we lose nothing which would be worth recovering." By the next mail the board wrote to him calling for estimates and specifications for a large increase of the stamping power; it was intended to go by slow degrees—ten stamps at a time—and we bounded our views at 50 stamps. In answer to that letter Capt. Sohus strongly objected to that increase in the stamping power mainly on the ground of the uncertainty of obtaining labour; but he said—"If you give me more machinery let me have a tailing mill, and I send you samples of tailings that you may have them assayed, and prove whether they are worth the trouble of working." We sent the tailings to the two best firms in London, and they substantially agree in telling us that they are worth about 1 ounce of gold and 39 ounces of silver. I have been since in communication with some persons supposed to be experts in this particular line, trying to ascertain what would be the best machinery to send out, and the best thing to do. We must wait until Captain Sohus himself reports; I understand he is a great metallurgist himself, he is on the spot, and he knows the locality, and probably his opinion when we get it, which will not be for some months, will be more valuable than we can obtain in London. At any rate we can do nothing until we hear from him. We did, immediately on receiving the assay, telegraph the result to him, ordering him to collect as much of the tailings as he could, and telling him the assayers in London considered he ought not to make such a loss, even with his existing machinery. In my communications with the gentlemen in London they told me that, of course, their assays of a small portion of stuff in their laboratories would produce far greater results than we could produce working on a large scale, but they said we might fairly expect to recover by the present means about three-fourths of what is in the stuff. Captain Sohus has before mentioned what he considers the actual value of the tailings, and said that if he had a tailing mill he would get about 100 or 150 ozs. of gold per month. I do not think he would use those figures at mere guess; he has certain materials for making assays, they are not so large and complete as he could wish, but he has some thing, and he would not put it in the precise way unless he had some real foundation; therefore, I cannot help thinking that this which he has sent home may have been some which he has taken out of some holes in the stream. He gets the washings of the Chontales as well as our own, and whatever the ore is in our tailings it is absolutely composed partly of the Chontales tailings. If some stuff is washed into a hole and remains for years, and a rapid stream passes over it, you can suppose that the earthy matter would get washed away, and the heavier particles would remain, so that the 1 oz. of gold and 39 ozs. of silver, my theory is correct, would not be due to any 1 ton of stuff, but to 3, or 4, or 50 tons. I say this with out any actual grounds, but I do not want you to run away with the notion that you are going to have a dividend of 1000 per cent., which would be the case if we got out the sevenfold value of the stuff, for that is what it comes to. The last point I have to mention is the quotation on the Stock Exchange, and I cannot help saying I admire the simplicity of the gentlemen who pressed the board to apply for the loan, and I admire still more the civility and courage of the gentlemen who led the forlorn hope attempt to take the citadel of the Stock Exchange in such a manner. Your company has been in existence, I think, eight years, it has never paid a dividend, it has exhausted all its capital, and long ago it would have been liquidated and wound-up had it not been for the extraordinary sagacity of the Chairman of the day, who advanced money to keep the thing going. It has in the Articles of Association two points (which you will be asked to consider presently), which I suppose are unexampled; one is that the directors need have no sort of qualification, and no sort of interest in the company; and another is that they are to be paid a gambling sort of way—nothing under certain circumstances, and I think it is 2000*l.* a year. I can hardly conceive that the application could have been made, and in the face of that has been done, and I think the Stock Exchange did not take the trouble to answer the last letter which was written, or rather they sent four lines with a refusal. I beg to move that the report be adopted.—Mr. CHARLES GREEN seconded the motion.

Capt. F. BALL said he wished to refer to the circular which he had sent out. The CHAIRMAN said the circular was not before the meeting at present, but Capt. Ball could refer to it at a later period of the proceedings.

Capt. BALL said he had two remarks he wished to make on the report. He thought the stamps must be inefficient, as so much gold was left in the tailings. He asked whether the interest on the 15 per cent. preference shares was cumulative?

The CHAIRMAN: Yes, it is.

Capt. BALL asked the amount of interest due on the 10 per cent. debentures, the 7 per cent. debentures, and the 15 per cent. preference shares? He would also like to know whether, in the event of anything occurring to Capt. Sohus, there was any European on the spot to take his place?

Mr. MACKENZIE referred to the large quantity of silver which the recent assay showed in the ore, and asked whether any silver had ever been sent home? He asked the question on behalf of a shareholder who considered the question a very serious one.

The CHAIRMAN, in reply, said that six months' interest was due on the debentures on the 1st of next month. As to the preference shares, in round numbers there was about 8500*l.* of accumulated interest due to the preference shareholders. As regarded the next question, from there was a great number of Germans on the mine, on a graduated scale, from Capt. Sohus downwards, but he did not think there was one whom the directors would like to have permanently there in the place of Capt. Sohus, in the event of anything happening to that gentleman. He had some doubt whether this quantity of silver would be found in all the tailings, as in all the bullion sent home there had been scarcely a trace of silver. There had been no silver in any quantity before.

Mr. MACKENZIE: The gentleman on whose behalf I ask the question is one of the largest shareholders, and if any silver existed in such large proportions there must have been a large amount of silver produced which did not find its way home.

The CHAIRMAN: The remark is a very proper one; all we can say is that we have never had any silver sent to us. There is no practical doubt that the assay has never shown any silver worth noticing in the amalgam.

The resolution for the adoption of the report and accounts was then put, and carried.

The CHAIRMAN said he had next to move a resolution relative to an alteration in the Articles of Association. At the last annual meeting he was asked to join the board, and he agreed to do so on the understanding that the shareholders unanimously, or pretty unanimously, agreed to alter two clauses of the Articles in the manner which he indicated at the time. A vote could not be formally taken at the last meeting, as no notice of the alterations had been given, but the question was put informally, and every gentleman voted for it, and approved of the alterations which he suggested. The board afterwards called an extraordinary meeting to

formally pass the resolutions for the alterations, when they were taken by surprise by having amendments moved by Capt. Ball. The amendments were carried by a show of hands, and the matter dropped for the time. In the meantime the board received a letter from Captain Ball, intimating his willingness to join the board, but the directors declined to accept Capt. Ball's offer. He went on to refer to the circular which Capt. Ball had sent out, and to what he designated the rather "snarling" manner in which some of the paragraphs were written. For instance, he particularly drew attention to the following paragraph in Capt. Ball's report:—"I think the remuneration which the directors propose for themselves is out of proportion to the value of their services to us." Now this was not, strictly speaking, remuneration which the directors were proposing for themselves; the directors had a distinct bargain with the shareholders embodied in the Articles of Association, and the shareholders had undertaken, wisely or unwisely, to give an accumulative 1000*l.* a year to the directors, and whenever the shareholders received 20 per cent. the directors should receive 2000*l.* As a matter of fact, the directors were really proposing to reduce their remuneration, and, therefore, he did not think it was right that a shareholder should use such an expression, which he could only designate as a "snarling" expression. He begged to move the following resolution:—"That the 66th Article of Association, as varied by the special resolution passed on June 27, 1870, and confirmed on July 15, 1870, be and is hereby further varied, and as varied shall read as follows:—The business of the company shall be managed by a board of directors, whose number may be varied from time to time by the company in general meeting, but until so varied shall not be less than three or more than five, and it shall be requisite that every director continues the owner of 200 shares of the company at least."—Mr. CHARLES GREEN seconded the resolution.

Captain BALL said the circular which he had sent out was somewhat hastily drawn. The report seemed to him an extremely meagre document, and was indeed no more than a *résumé* of the different monthly reports which they had seen from time to time in the newspapers. Under feelings of disappointment he had sent out the circular; if he had heard the explanation which they had just had the advantage of hearing from Sir Leopold Heath, he was ready to say he did not think he should have sent out the circular. The report did not give any date for the ending of the financial half year, and there was nothing about whether the company was working at a loss or a profit. It had been put in the report he should not have sent out his circular. He would tell them the result of that circular. He received 41 replies, four were in favour of the directors' proposition; on the other hand, out of 37 letters, 34 contained proxies representing 4100 votes, and three gentlemen had written to him that morning, saying they were sorry they were unable to send their proxies. As regarded the special meeting to which the Chairman had alluded, he himself had attended that meeting without knowing that the resolution had been carried at the first meeting. As regarded his application to join the board, there were two or three reasons; in the first place, he wanted to join the board in order to get behind the scenes, to see what the work of the directors really was; in the second place, he seconded an amendment for raising the qualification to 500 shares, to which the directors objected, and said that in that case no director would come on the board. And there were one or two other reasons which fully justified him in being willing to take a seat at the board. At the same time he was not ambitious to be on the board. Since he had heard the Chairman's explanations his views had been somewhat modified. He would ask how many proxies the board had, because if he could not carry his views he would not vote his proxies?—The CHAIRMAN: You wish me to play "Heads I win, tails you lose." (A laugh.) You are fighting a battle against, and you want to show our hands. The resolution must be carried by a majority of three-fourths. You cannot possibly carry any amendment, but you may cure. However, I may tell you that the number of our proxies is almost double yours; we have proxies representing 8000 votes, without our own shares.

Capt. BALL: Having made these remarks, I have no amendment to propose. The CHAIRMAN said he could not help thinking that a gentleman who took such a decided and distinct view with regard to the management of this company ought to have taken the trouble to read the *Mining Journal*, which was sent to the shareholders with a full account of the meeting held six months ago. Capt. Ball made the charge not knowing what passed at that meeting, and for the action he had taken; but the ground was somewhat out from under his feet by the fact that a report was sent out to the shareholders. As to the work of the directors, not a single week had passed that he had not been to the office two or three times. The board meetings might average a little under two a month; but every mail which came in brought demands of all kinds, and there was a great deal of work which, if not hard work, was work which it was absolutely necessary should be done.

The resolution was then put and carried. The CHAIRMAN said he need not make any observation in introducing the next resolution. He regretted that the owners of 4000 shares should think the directors were asking for too much; at any rate, he would not have joined the board had he known six months ago that there was such a feeling. He moved that the 11th Article of the Articles of Association be rescinded, and in lieu thereof an article be substituted to the effect that the directors, exclusive of the managing director, if any, shall be entitled to take for their remuneration, so long as no dividend is declared on ordinary shares, 300*l.* a year, and when not less than 5 per cent. is paid on ordinary shares 500*l.* a year, with an additional 50*l.* for every 1 per cent. over and above the first 10 per cent., to be divided as the directors may think fit.

Mr. CHARLES GREEN seconded the resolution. He said there was an old saying that "where ignorance is bliss 'tis folly to be wise." Certainly the shareholders of this company had reason to congratulate themselves on the fact that Sir Leopold Heath was ignorant of the feelings of some of the shareholders against the proposals now made, for if he had known of those feelings he would have declined to join the board, and a greater calamity could not have happened than the non-accession of Sir Leopold Heath to the board. He referred to the great services which Sir Leopold Heath had already rendered to the company, and he was sure that in future he would do the company an amazing amount of good. After a few remarks from Capt. BALL, the resolution was put and carried. A vote of thanks to the Chairman closed the proceedings.

[For remainder of Meetings see to-day's Supplement.]

THE BLACK-ROCK COLLIERY COMPANY, LIMITED.

Capital £25,000, in 10,000 Shares of £2 10*s.* each, fully paid.

DIRECTORS.
E. CHILCOTT, Esq., Director of the Hendreorgan Colliery Company (Limited).
JOHN CULPAN, Esq., Director of the Chapel House Colliery Company (Limited).
Major P. H. SYDENHAM ROSS, ditto ditto ditto.
OFFICES, 1, PALMERSTON BUILDINGS, LONDON, E.C.

During the past week a new company has been registered to purchase and develop a colliery in South Wales; and as we understand that all the shares have been taken up privately, it has been found unnecessary to issue a prospectus. We have, however, been able to glean a few particulars, which we here publish.

It is stated there are two seams of coal which are identical with the celebrated Llanwilt seam, the coal from which has been for many years first on the Admiralty List, and sold for 2*s.* 6*d.* per ton more than any other of the South Wales coals. We understand the colliery, raised during the first six months of this year about 8800 tons of coal, at a profit of 1200*l.*, being an average profit of 2*s.* 8*d.* per ton. The profits may, therefore, be said to have amounted during that period to very nearly 10 per cent. upon the capital of the company now formed. It is anticipated, however, that much larger profits will be long realised.

We have obtained a copy of the report of Mr. Thomas Davies, a gentleman well known in connection with coal mining in South Wales, and we here reprint it. A very exhaustive report has been written by Mr. Thompson, and this we hope to be able to publish next week.

REPORT OF MR. THOMAS DAVIES.
This property is situated on the Taff Vale Railway, about 13 miles from the shipping port of Cardiff. It consists in all of 523 acres of coal land, or thereabouts, lying between two large faults, which are well known in the district. The eastward fault is a downthrow to west about 120 yards, and the westward a downthrow of 35 yards to west. There are no faults or disturbances between these two large dislocations—in fact, the property lies between the above-named faults. I understand the 25 acres of the Upper seam, or No. 1, as it is called, have been sublet at an improved royalty of 1*s.* 6*d.* per ton, with a guaranteed rent of 100*l.* per annum. The plant consists of a well-laid railway siding, railway wagons, trams, colliery rails, horses, steam engines, steam pumps, tools, &c. There are also good offices, smithy, carpenter, shoemaker, and other trades which are in excellent order. The inclination of strata rises at the rate of 1 in 9, and the bearing of rise is nearly west. The Upper seam has been worked for some years, but there is left about 200 acres yet to be worked of the No. 1, and about 523 acres of the Lower, or No. 2, seam. There is no explosive gas in either of these veins, and the roofs and bottoms are good, and require very little propping. Both veins rank with the celebrated Llanwilt and Mynyddislwyn seams. The amount of coal I estimate still to be worked from both veins is 2,375,000 tons, which at the rate of 250 tons per day, would last for 35 years per annum, is equal to 63,600 tons per year, and would occupy a period of 35 years to work out.

MODE OF WORKING.—The two seams mentioned above are worked by adits or day levels, but the actual style of extracting the coal is not as I would advise. It would be very much more economical to open the works in short ranges, continue the main levels, and extract the coal from the faces of the cross headings backwards. By this method very little pitwood would be required, and the percentage of round or large coal would be increased; although I must admit that the percentage of small, according to the present mode of working, is very trifling compared with other collieries well known to me in the district.

I estimate, with an output of 250 tons per day, as before stated, that the coal can be put free on board at Cardiff at 8*s.* 6*d.* per ton, including royalty of 7*d.* per ton of 2520 lbs. The quantity of small produced by the aggregate working of 63,600 tons is about 7 per cent. I, therefore, arrive at the following results:—

Large	55,500	at 12 <i>s.</i>	£35,100 0 0
Small	4,000	at 7 <i>s.</i>	1,400 0 0
Total			£36,500 0 0
Cost of raising 63,600, at 8 <i>s.</i> 6 <i>d.</i> per ton, free on board			2,562 10 0
Net profit per annum			£33,937 10 0

The demand for land sales is very extensive, and the quality of the coal is so well known in the neighbourhood that it commands 1*s.* per ton.

In addition to the above-mentioned seams there is the second series of coals, which are generally known as the Rhondda seams, under which also lie the celebrated steam coals of the Aberdare and Merthyr districts, which would be almost inexhaustible.

CORNISH CONSOLIDATED IRON MINES CORPORATION.—Mr. W. R. Roebuck, writing to the *West Briton*, says:—"The very large extent to which these mines have now been worked proves—1. That my most sanguine expectations with regard to the immense deposits of iron ore have been very much more than realised. 2. That the quality of the ore discovered is equal if not superior to any in England. 3. That the mines are so situated that they are not only free from the risk of being comparatively independent of any foreign supply of spiegel-iron, so essential in the manufacture of Bessemer steel iron. 4. That nothing but systematic, skillful, and good management is required in the working of these mines to make them—1. A rich remunerative property to their owners. 2. To make them supply such an amount of traffic to the Cornwall Minerals Railway as

will make these railways good dividend-paying lines; and—3. They will introduce a large new industry in the country that will absorb the whole labour of those 'sons of the soil' who are leaving their 'hearths and homes' in such vast numbers in search of employment in foreign countries. The cloud these mines now labouring under arises from nothing in the world, but the gross ignorance of mining matters, and the reckless extravagance that has, up to Mr. Parker's advent, characterised the management, or rather mismanagement, of this gigantic property. It is because I have, with a plainness of speech that has been offensive, protested, remonstrated, and condemned the reckless course that has been pursued, that the bitter opposition of all those concerned in the past management of the Mines Corporation has been shown towards me. The painful truthfulness of my predictions must be anything but agreeable to those who stubbornly turned a deaf ear to my counsels; however, such is the inherent and substantial value of the Perran Mines that, in spite of all adverse circumstances, they will assert themselves at an early day, and more than fulfil all that has been predicted of them, either by the late Mr. Parker, Mr. Henry Bessemer, or myself.

Original Correspondence.

LEAD MINING IN THE HALKIN MOUNTAINS, HOLYWELL DISTRICT.

SIR,—In my rambles through this district in September my attention was drawn to the very extensive workings on the old mines—the Milwr, Silver Rake, and others; near these, and doubtless on some of the same lodes, are the Hazel Grove, the West Milwr, and the Prince Patrick. The merits of the latter are well known, and the former two being well situated require a further development, which with a fair amount of capital and good management will, doubtless, become successful. In the centre of this group is situated the Great Pant-y-Pydw Mines; here I find a large amount of work has been done, and the machinery erected. To visit the ore floors, where was a fine pile of lead ore for sale, was interesting, and I was much pleased at the returns, which was that of one month only, this being raised from a new lode lately struck at 60 yards in depth; from this lode I have since been informed about 15 tons more lead has been raised during the last month, which will realise quite 100*l.* profit on the month's working. This lode is still improving in this shaft, and returns may be expected to increase monthly, the sett being so very extensive, and the lodes being so many, and drained of water to a great depth. The shareholders of this mine may be congratulated on the possession of a property which may well be considered a fortune to its proprietors. Another important feature in this mine is the circumstance of having cut an immense swallow, or cavern, in the lime rock, which has drained the mine of water to a depth at which it is impossible yet to guess, thus saving the great cost of pumping.

In another part of the mountain the deep level is being driven, which will, doubtless, eventually drain the whole hill of water, and although some time may elapse before great success is achieved, yet to this district for successful mining the public have to look, while in each of the concerns now being worked success similar to that which has attended others in the district may be anticipated speedily. As examples we may quote the Silver Rake, the Milwr group, the Gillifowler, Prince Patrick, Pen-y-henblas, &c.; all these surround and are adjacent to the Great Pant-y-Pydw Consolidated Mines.

Oct. 15. [For remainder of Original Correspondence see this day's Supplement.]

MINING NOTABILIA

[EXTRACTS FROM OUR MINING CORRESPONDENCE.]

CHAPEL HOUSE COLLIERY.—Everything is going on in the usual routine, the output being at the rate of over 6000 tons per month, and the new works being in rapid progress. A large stock of bricks now on hand, brickmaking has been suspended for the present, owing to the inclement weather; it will, however, be resumed under cover during the winter if the present large stock of bricks is not found sufficient to last until the spring. The new shaft is now sunk to a depth of about 185 yards, and sinking continues at the rate of 4 to 5 yards per week. The new machinery and engines are nearly ready for work, and the heading for the new pit is finished and about to be erected. It is found that the business requires an addition to the already large rolling stock, and we understand that twenty new wagons are to be ordered at once. The shares have been steadily rising in the market, being now quoted 4½ to 4¾ with a decided upward tendency, and opinions are expressed that they will shortly reach 5*l.*

SAINT PATRICK.—The first of the well-known lodes is expected to be cut in the course of the next fortnight at the 120 yard level, and already branches of lead ore and blende are being met with in the country rock, indicating the close proximity of the lode referred to.

FOREIGN MINES.

ST. JOHN DEL REY.—The directors have received from Morro Velho the following telegram, dated Rio de Janeiro, Oct. 11:—"Produce 3½ days of September, 46,000 o*z.*s.—17,825*l.* Yield 8 o*z.*s. per ton. Rains have set in. All going on well."

DON PEDRO.—Letter from the mine captains, dated Sept. 9: The ore returned has again been taken from No. 6 and No. 8 shafts; no boxwork available; the general work by sampling is of a low standard. Operations generally are continued as usual. Water being drawn from the mine still amounts to 20 or 25 cubic feet per minute. The water was put in from the pressure of the water in the mine, and the water was still continued. In our explorations in the mine we are sorry to say we do not see any change for the better.—Explorations: We are driving crosscuts in both easterly and westerly directions at Tambor east, and the jactancy is of such a kindly appearance that, although we have not yet obtained any auriferous samples, we think it advisable to continue in this direction.—Force: Six natives and one Englishman employed. At Cova, where we have an Englishman and 15 natives and blacks employed, we are happy to report that in following up the ore we have cut what appears to us a promising lode, particles of gold being distinctly visible in the hard jactancy. We have commenced driving a cross-cut to thoroughly prove this as rapidly as possible, so as to ascertain the length and width of the lode.

SIERRA BUTTES.—Result of the working at the Sierra Buttes and Pumas Eureka Mines for September:—Sierra Buttes Mine: Receipts, \$32,476; total California expenses, including cost of mining and milling, \$31,524.—Pumas Eureka Mine: Receipts, \$33,576; total California expenses, including cost of mining and milling, \$19,535. In addition to the foregoing yield from the mill 57 tons of sulphurets have been saved.

RICHMOND CONSOLIDATED.—Cablegram from the mine at Eureka, Nevada:—"Well, London: Week's run, \$46,000. Furnaces working well. Drifting from winze, stops looking well."—RICHARD.

Sept. 21: I am very much pleased to be able to report more favourably of the mine than I have been able for some weeks past. The stope between the 500 and 600 levels is very much improved; at a level where we began the stope it was narrow, and showed lime 18 feet from the foot-wall; we have gone over this, and driven in one about 60 ft. from the foot-wall, and the end is still in good shape. I was quite cheered when I saw this to-day continuing, as it does, to improve; two weeks since the appearance of the stope was anything but encouraging. The work sinking below the 600 is also much improved; we have been sinking in hard iron ore of low grade, and when we reached a depth of 13 ft. we had fine nearly all over the bottom; we sunk through and found again the iron ore in the bottom, and now one side of the winze is in soft ore; it is very encouraging to see the ore make down. I felt at one time very anxious about the bottom of the mine, but I am glad to say that it is looking much brighter than it was. The continuation of the stope from the bottom of the 400 is also looking very promising; we have taken some ore from there of pretty high grade, and it appears to me to improve towards the 200; it is more to the north-west than the stope in the bottom of the 400, and consequently nearer the shaft; you can trace it on the plan; it is on the right hand side of the end of the first cross cut to the right in the 400 main drift from the shaft; if this should make a good body of ore upwards it would be a fine discovery. The shaft is down 63 ft. below the 700, still in the same kind of ground; we have had no assay of any value from it as yet; the highest I have had is 35 o*z.* per ton. I am hoping to find an argentiferous bearing quartz below this mass of barren quartz. The 700 drift is being pushed towards the ore body as fast as possible; the ground is rather hard, but blasts very well. The 200 cross-cut is much easier for driving, and the ground is more promising, being stained with oxide of iron, which is a good indication. On the west side of the hill we are stopping some pretty fair grade ore, although it is very low in lead. We have quite a body of ore opened here, but so far we have not found anything which gives indications of its going down. We are now opening a stope so as to get to a wall, or what appears to be; when we get to this wall we shall sink on it. On the whole, I must say that the mine has very much improved during the past week. The ground for the new holding-down shaft is finished, and ready for the masons; we have begun for holding-down shafts to begin building; I hear that they are shipped from San Francisco, and will be here very shortly, when we shall begin to lay the foundations. I have already had stone hauled for the heavy work, and once we have started on the building, if the machinery does not retard us, it will soon be up and ready for work. The little engine got out of repair on Wednesday, the stay of the broke broke, which prevented us holding for nearly 36 hours; it is all right again, and working smoothly. I received your several telegrams, and answered them fully as I could. The engine is working very nicely indeed since we changed the crank; it is a long time since I have seen it working so smoothly, and does all that is required of it with ease. The returns I cabled this evening are low; it is chiefly owing to the low grade of ore we have been working, and having a better cable this week last during the former part of the week. I hope to have a better cable this week.

The ore coming from the mine is better.—R. RICHARD.

LINARES.—Oct. 6: Pozo Ancho Mine: The 100, east and west of Warner's engine-shaft, is in a large lode, with good stones of ore. The ground in the 55, west of Creasy's shaft, is hard, and the lode small and poor. The lode in the 75, west of Pell's engine-shaft, is rather small, producing ½ ton per fm. The lode in the 90, this shaft, is in a lode worth 1 ton per ft. fathom, and improving. The 75 and 65, east of San Francisco shaft, contains occasional stones of ore. The 75 and 65, east of this shaft, are both in lodes producing 1 ton per fm. At Pell's engine-shaft, below the 90, the men have been cutting eastern and tip-plate in the past month. No. 202 winze, below the 45, No. 203 winze, below the 85, and No. 204 winze, below the 55, are each producing 1 ton of lead ore per fathom. The full complement of ore was returned in the past month, and the stopes are now, on the whole,

HOLLOWAYS'S PILLS.—The extraordinary variations of temperature attending the early autumn are extremely trying to the delicate-chested, the weak and nervous. All troubled by these afflictions should resolve to resort to this strengthening and regulating medicine immediately they perceive in themselves discomfort of any kind, or of any kind of weakness which betokens disordered digestion and defective secretion of bile. One of Holloways's Pills taken about noon, and followed at bedtime by a dose sufficiently large to act aperiently, will speedily recruit the faulty functions, and restore order throughout the entire system. A treatment so safe in operation and so successful in results should be known and practised when cold and sundry other causes is attempting to gain a vexatious footing.

COPPER ORES.				
Date.	Mine.	Tons.	Price per ton.	Purchaser.
Oct. 5	Caldbeck Fells	11	£19 2 0	Nevill, Druce, and Co.
—	ditto	14½	5 14 0	ditto

Mining Correspondence.

BRITISH MINES.

ABERDUNANT.—S. Toy, Oct. 13: The men have finished clearing the stuff from No. 1 adit level, and secured it with timber, and are now driving the end east, where the lode is 3 ft. wide, worth 5s. per fathom, and of a very kindly appearance. The slope in the roof of this level has improved, and is now worth 17s. per fathom for lead.

BEDFORD UNITED.—Wm. Phillips, Oct. 14: There is very little change to notice to-day. In the course of another week or so we shall take down the lode in the different levels, so as to be able to give a full report.

BELSTONE.—J. Neill, Oct. 9: A shaft: In the 80 cross-cut south good progress is being made, driving 1 ft. this week; the strata are much the same as last reported—still spotted with mudi and ore. C. Shaft: No change in the slope. **BLUE HILLS.**—S. Bennetts, A. Gripe, Oct. 9: The past fortnight has not shown much change worthy of notice in any of the points of operation. The 50 east end, on the Pink lode, is in apparently a favourable run of ground, although still somewhat stiff for driving, on the south side of a large lode of low-quality tin-stuff. The various tribute pitches remain without much alteration.

BOG.—W. T. Harris, J. Barkell, Oct. 13: The sinking of the engine-shaft below the 175 is going on very favourably, and the lode, which is about 6 ft. wide, is yielding some saving stuff for lead and blende. The end driving east on the south lode at this level continues to yield about 1½ tons of ore per fathom; we are about 3 fms. more driving we shall get up to a winze already sunk down from the 163, which will ventilate the end, and lay open fresh ground for tributaries. Having cleared the 163 east of junction, on the south lode up to the forebrest, we have resumed the driving; the lode in the end is very promising, and producing about 10 cwt. lead ore per fathom. The end going west on the main lode at this level is yielding a little lead and blende, but not enough at present to pay the cost of driving. There is no alteration in the cross-cut driving north at the 130 worthy of notice. The same remark may be applied to the other bargains and tribute pitches in the mine.

CATHEDRAL.—J. Michell, Oct. 14: Fair progress is being made in sinking the shaft. During the week we have taken down some portion of the lode; it is fully 3 ft. wide, composed of fluor spar, arsenical mudi, and quartz, mixed with yellow copper ore; we hope to see more of the lode in a day or two. The 30 west is being pushed on as fast as possible; it lately passed through a large vein of gossan, red oxide, and grey copper ore. In blasting down the south part of the lode we met with beautiful grey ore; the lode here is porous, and letting out more water. In the eastern end there is no change during the past week; driftage still continued in a fine gossan lode, 2 ft. wide. Our stopes are looking the same as usual, and all our dressing operations are going forward well towards our next sale of copper at the end of the month. The appearance of the mine, on the whole, is more promising than when last reported, the grey ore being very rich.

CRENVEY AND WHEEL ABRAHAM UNITED.—Wm. Thomas, James Hammill, Oct. 13: Setting Report: Sturt's Engine-Shaft: To drive the 228 west on the old lode by eight men, 1 fm. or the month, at 14s. per fathom; the lode is 2½ ft. wide, yielding good stones of copper ore.—St. George's Shaft: To drive the 215 west by six men, 1 fm. or the month, at 11s. per fathom; the lode is 3 ft. wide, and will yield 3 tons of copper ore per fathom. To drive the 215 east on the south lode and west of shaft by four men, 1 fm. or the month, at 12s. per fathom; the lode is 1½ ft. wide, producing stones of copper ore.—Woolf's Shaft: To sink the shaft below the 220 by eight men, 1 fm. or the month, at 25s. per fathom; the lode is 5 ft. wide, yielding some good copper ore, having a very kindly appearance. In the 220, driving east, the lode is 4 ft. wide, and will yield 4 tons of copper ore per fathom.—Blewitt's Shaft: To drive the 234 west by eight men, 1 fm. or the month, at 14s. per fathom; the lode is 4 ft. wide, producing a little copper ore.—Richards's Shaft: To drive the 220 west by eight men, 1 fm. or the month, at 7s. per fathom; the lode is 6 ft. wide, and will yield 2½ tons of copper ore per fathom, and looks likely to further improve. To drive the 210 west by three men, 1 fm. or the month, at 6s. per fathom; the lode is 4 ft. wide, and yielding 1 ton of copper ore per fathom. To drive the 200 west by two men and two boys, 1 fm. or the month, at 6s. per fathom; the lode is 2½ ft. wide, producing occasionally stones of copper ore. To sink the winze below this level by four men, 1 fm. or the month, at 9s. per fathom; the lode is 4 ft. wide, yielding a little copper ore.

OWM DWYFOR (Copper and Silver-Lead).—Capt. J. Jewell, Oct. 14: South Cross-cut: The lode in No. 4 level south is 20 in. wide, yielding 1 ton of silver-lead ore per fathom; this level is now within 3 or 4 ft. of the shaft, and is letting out a deal of water. I hope to communicate with the shaft in six or eight days more. North Cross-cut: The lode in No. 4 level south is 20 in. wide, yielding 1 ton of silver-lead ore per fathom; this level is now within 3 or 4 ft. of the shaft, and is letting out a deal of water. I hope to communicate with the shaft in six or eight days more. North Cross-cut: The lode in No. 4 level south is 20 in. wide, yielding 1 ton of silver-lead ore per fathom; this level is now within 3 or 4 ft. of the shaft, and is letting out a deal of water. I hope to communicate with the shaft in six or eight days more.

OWM ELAN.—Wm. Goldsworthy, Oct. 9: In the 30, west of shaft, the lode will produce 15 cwt. of lead ore per fathom; there is a strong feel of water coming from the end of the lode, and the level is improving as we extend the drive; the lode is 4 ft. wide, and yielding 1 ton of lead ore per fathom. I have for the present suspended driving the 20, west of shaft, and put the men to stop the back of this level near the end, where the lode is large and productive. No. 1 store, in the back of this level, will produce 14 cwt. of lead and blende ore per fathom. The slope in the 20 east of shaft, on the south lode, is worth 8 cwt. lead and 4 cwt. of blende per fathom. The slope in the back of the 20, east of cross-course, will produce 18 cwt. of lead ore per fathom. The slope (30 east) west of cross-course, will also produce 18 cwt. of lead ore per fathom. All surface work is going on with regularity, and the machinery working well.

DIS BROKE.—T. Hodge and Son, Oct. 9: Setting Report: Wilson's shaft to sink below the 25, by six men, at 16s. per fathom. We have completed our pitwork, &c., and connected the rods to the wheel to-day, and we are pleased to say that everything works very well indeed; sinking will go on now without let or hindrance. The 25 to drive north-west, by six men, at 10s. per fathom; here we have just picked into the leader part of the lode; so far as seen it is showing some strong spots of lead and yellow copper ores, but will take another week to get through to ascertain its value—a good feel of water flowing from the end, which has entirely drained the lode. The slope in the back of the 25, west of junction, to six men, at 6s. per fathom, worth 12s. per fathom. The slope east of trial winze, in the bottom of the adit, to four men, at 5s. 10s. per fathom, worth 10s. per fathom; the lode here is rapidly declining as we go east. In the adit level cross-cut we have reached the north wall of the lode, which is showing some good spots of ore, not to value, and suspended. Surface work is being pushed on as fast as possible. We intend to sample next week.

DENBIGHSHIRE CONSOLIDATED.—J. Pryor, Oct. 14: In the 112 east we have placed some men a few feet back from the shaft, and are sinking a very nice rise of ore, the lode being fully 3 ft. wide. In the 112 west, new lode, the vein has been closer during the past week, but from appearances I am expecting that softer ground is coming in, when we shall have better sight of ore than before we were drawing near to the run of lead left at Parry's dump below the 40. The No. 3 rise in the back of this level looks much better to-day for ore; ground is softer, and more productive. In the cross-cut north there is a change taking place in the underlay of the measures; I am not prepared at present to say what will be the result, but believe we are drawing near the lode.

DEVON GREAT CONSOLS.—James Richards, Oct. 15: Wheel Maria—Gard's Engine-Shaft: The lode in the 95 west is 18 in. wide, composed chiefly of quartz, with a small proportion of mudi. In the 95 east the lode is 2 ft. wide, consisting of capel, quartz, peach, and mudi. These two drives have been driven 40 fms. in each direction (the distance stipulated in the new lease) without meeting with any discovery of value, are both suspended.—New North Lode: In the 54 east the lode is 2 ft. wide, composed of mudi, quartz, capel, and peach. The driving of the 54 cross-cut south has been resumed for proof of any other part of the lode that may still be standing in that direction. In the 28 east the lode is small, 1 ft. wide, composed of capel, quartz, and mudi. In the 28 west the lode is 1 ft. wide, composed of capel, quartz, and mudi. This shaft is down 5 fms. below the 280, and is in regular course of sinking the lode, proving 2½ ft. wide, consisting of capel, quartz, and mudi. In the 280 cross-cut north the lode has been intersected and cut through, proving 3½ ft. wide, consisting of capel, mudi, (arsenical), and quartz, and driving has been commenced both east and west on the course thereof. In the 60 west the lode is 4 ft. wide, producing saving work for copper ore.—Hitchin's Engine-Shaft—South Lode: The lode in Gullet's rise in the back of the 130 east is still 2½ ft. wide, and worth 3 tons of ore, or 15s. per fathom.—Wheal Ennma—Thomas's Engine-Shaft: In the 210, driving is by the side of the lode, where the ground is hard, and progress is slow. In the 145 east driving is also by the side of the lode, and tolerably fair progress is being made.—Inclined Shaft: In Alford's cross-cut south, at the 100 west, the ground is not quite so easy for exploring; it is, however, congenial for the production of mineral.—Railway Shaft, New South Lode: In the 160 east, 2 ft. of the lode being carried, is composed of mudi, capel, quartz, and is still producing good stones of ore.—New Shaft, New South Lode: In the 160 west the lode is 4 ft. wide, consisting of capel, quartz, mudi, and good stones of ore. In the 160 east the lode is increasing in size, being at present 4 ft. wide, composed of arsenical mudi, capel, quartz, and good stones of ore; very promising. In the 145 east the lode is still 4 ft. wide, and worth 7 tons of ore, or 30s. per fms. In Dymond's winze sinking below the 145 east the lode is improved, and is a good course of ore, worth for length and width carried 9 ft. by 4 ft., 16 tons ore, or 75s. per fathom. In the 145, driving is continued by the side of the lode, and the ground admits of fair progress being made. The lode in the 130 east is 4 ft. wide, and is still worth 10 tons of ore, or 20s. per fathom. The lode in Castle's winze being stripped down below the 130 east, is a very fine course of ore, worth 20 tons, or 100s. per fathom. In Scombe's rise in the back of the 115 east the lode is 2 ft. wide, and produces a little ore. In the 100, east of Heford's cross-cut, the lode is 18 in. wide, consisting of mudi and quartz, and a small proportion of copper ore.

DUBBY SYKE.—Wm. Tallantire, Oct. 8: Since we have got the Shooting-box level entirely cleared out, I purpose to give a full report of the work done by the "old man," and the veins he has cut, just as they are standing. The level is driven mostly in limestone and grey beds to the distance of 173 fms.; 10 fms. back from the forebrest is a rise to the surface, about 15 fms. of which is standing good, except 3 fms. of plat, which has been timbered, and the timbering has given way; we are repairing this to keep it open for an air-course. There is an old cross-cut to the north, about 6 fms. above the level from which the level is driven, and cannot see, the cross-cut being partly crushed in. That is all the work done, that we can see, of any worth. The veins that we can see in the level are—first, a cross vein north and south about 62 fms. from the level mouth, about 1 ft. wide, of barrytes, with 3 ft. of throw. About 154 fms. from the level mouth is another vein, east and west, of great strength, with rich-looking red mineral, famp, rider, and barrytes, as good and kindly looking a vein for producing lead ore in large quantities as can be wished for. This vein and the above cross vein will intersect a few fathoms to the west from this; we shall open on this vein with four men as soon as possible. About 12 fms. from this vein there is another vein, east and west, with a good width of kindly looking vein-stuff in the beds, which is every way likely for bearing ore, which we can try by rising in it into the higher stratum. There is also another north and south string, but not of much strength, and none of these veins have been tried except driving them.—Dubby Syke Level: There is no change in the cross-cut at Dubby Syke level; the beds are as usual.

DYLLIFFE.—Edward Rogers, Oct. 13: Dylliff Lode: The 120 is driving east of boundary shaft, by four men, at 6s. 10s. per fathom; the lode is 3 ft. wide, producing some good stones of lead. At the 105 there are twelve men cutting ground preparatory to fixing rods in the cross-cut, in order to sink the engine-shaft below the 120, on the underlie of the lode. The winze in bottom of the 40 is commenced to the 60; as soon as it is squared down and the value of the lode is ascertained I intend driving the 50 east of this point. The 25 is driving east of old engine-shaft, by six men, at 5s. 10s. per fathom; the lode is worth 12s. per fathom.

At the 15, east of this shaft, we are stripping down the side of the level, by six men, at 4s. per fathom; the lode is yielding a little lead ore, but not enough to pay for stopping.—Esgairgaled Lode: There are four men driving the 45 west by the side of the lode, at 5s. per fathom, and six men sinking the winze in bottom of the 35, at 6s. per fathom. I expect to communicate these two points in about five weeks from this time. The tribute setting is as follows:—Four men, at 3s. 5s. per ton; ten men, at 4s.; eight men, at 4s. 10s.; thirty-two men, at 5s.; fourteen men, at 5s. 10s.; six men, at 6s. 10s.; and eight men, at 7s. 10s. per ton. We are sampling 80 tons of lead ore to-day, for sale on the 20th inst.

EAST BASSET.—Richard Pryor, Edward Adams, Oct. 13: The lode in the still standing on the north side, is now worth 12s. per fathom, and is now worth 24s. per fathom. On Tuesday last we sold 39 tons 11 cwt. of copper ore, which realised 322s. 18d., and hope to get a good parcel against the next sampling. The men engaged in driving the 30 cross-cut are making good progress, and we are daily expecting to cut the lode. Friday next being our pay and setting day, a full report shall follow.

EAST DARREN.—Oct. 12: Skinner's shaft, under the 116, is now down the required depth for the 130 fm. level, and men engaged in clearing stuff and putting in solar over fork preparatory to extending the cross-cut south to the lode, and have let 3 fathoms stem, to drive at 12s. per fathom. In the 116 east the lode is sinking in back of the 80, east and west of flat rod shaft, is now worth about 24s. per fathom. On Tuesday last we sold 39 tons 11 cwt. of copper ore, which realised 322s. 18d., and hope to get a good parcel against the next sampling. The men engaged in driving the 30 cross-cut are making good progress, and we are daily expecting to cut the lode. Friday next being our pay and setting day, a full report shall follow.

EAST WHEEL GRENVILLE.—E. Hosking, W. Bennetts, Oct. 9: Setting Report: To stop below the 120, west of engine-shaft, by six men, at 2s. per fm.; the lode is 2½ ft. wide, worth 6s. per fm. To drive the 120 cross-cut north of engine lode, by two men and one boy, at 10s. per fm. To stop above the 110, east of rise, by two men, at 3s. per fathom; the lode is 18 in. wide, worth 5s. per fm. To drive the 75 west, on the caunter, by two men, at 6s. per fm.; the lode is 15 inches wide, worth 1 ton of copper ore per fathom. To rise above the 45, east of cross-course, by two men, at 7s. per fm.; the lode is 2½ ft. wide, worth 5s. per fm. To drive the 25 east of cross-cut, by two men, at 6s. per fathom; the lode is 12 in. wide, producing some good copper ore.

EAST WHEEL LOVELL.—R. Quentrell, Oct. 13: Fatwork: In the new shaft sinking below the 100 the lode towards the eastern end has been a little disordered during the past week, but I think it is only temporary, as it is again improving.—Tregonebris: The slope in back of the 34 east has improved, and is now worth from 12s. to 20s. per fathom. The lode in the winze below the adit west is worth 12s. per fathom.

FURZE HILL.—W. Dodge, Oct. 14: There is no lode as yet in the Midway level, east of the last cross-course; the distance driven from the point of displacement is now about 7½ fms. The country continues a light-blue slate, but a little stiffer than when we first commenced cross-cutting.—Middle Lode: The slope in bottom of the 40, east of cross-cut, are worth on an average 4s. 10s. per fathom. Our monthly sale of tin will be next week, which will about meet the labour cost.

GAWTON COPPER.—George Rowe, George Rowe, jun., Oct. 9: The lode in the 117, east of King's engine-shaft, is 4 ft. wide, producing good stones of ore. The lode in the slope in the south part and back of the 117 is worth 10s. per fathom. The lode in the winze sinking below the 105 is worth 12s. per fathom. The lode in the slope in the back of the 95, east of winze, is worth 20s. per fathom. The slope in the back of the same level, west of winze, is worth 10s. per fathom. The lode in the winze and slope in bottom of the 95 is worth 6s. per fathom. The lode in the 82 east is 5 ft. wide, principally spar and capel, intermixed with mudi and ore. The lode in the slope in the bottom of the 82, west of winze, is worth 6s. per fathom. The lode in the rise going up in the back of the 70 is worth 10s. per fathom. All other points are without change.

GLYN.—James Roach, Oct. 13: It is satisfactory to be able to say that all the machinery recently erected is in excellent condition, and doing its work well, and sinking the engine shaft is followed with energy. I have let to sink to a 15 fm. level, and the shaft is now down 14 fms. The lode is 4 ft. wide, and yielding 1 ton of lead ore per fathom, and driving east and west therefrom on its course, where I confidently expect we shall discover lead that will satisfy the proprietors at our present shallow depth. We have found lead in every foot of ground opened on the lode. **GORSIEDD AND MERLLYN CONSOLS.**—W. Edwards, Oct. 14: The driving adit level is more favourable for progress, and there is evidently a change of some sort about to take place. Since my last I placed men to sink in the adit near Waen, at a point where the Merlyn vein should cross the level. I am pleased to say that we have evidently intersected a lode, and should it prove to be the Merlyn vein, we shall have a large body of lead to work upon, and prefer waiting for a few days before sending you further information. We appear to be on the north side of a lode, and some of the lumps of lead brought up this morning would weigh from 8 to 10 to 17 lbs.

GREAT RETALLACK.—John Harris, Oct. 9: The lode in the 40 east is about 3 ft. wide, and worth for blende about 1 ton per fathom. The ground in the winze-shaft has very much improved for sinking, and the men are making very much better progress; the shaft measured 24 fms. 0 ft. 6 in. to-day, and I am hoping it will be holed next week.

GREAT RETALLACK.—John Harris, Oct. 14: The lode in the 40 is without change since last reported, it continuing to yield good blende of about 1 ton per fathom. The ground in the winze-shaft continues favourable for sinking, and I am expecting to hole very early, as we can hear each other's voices by calling.

GREAT SNAFFELL.—H. James, Oct. 11: The 74 stopes and the 85 stopes and driving continue much the same as last reported on; these workings are for the present suspended. In the present month the lode in the 100 and north has very much improved both in its general character and in value, being more composed of soft quartz, and richer in lead and blende, with a good yield of water, and is from 6 to 7 ft. wide, and has now driven through about 4 fms. bearing a good only lode in the back of the same level, and the present forecast is also looking very promising. We may expect a further improvement any day, as all the ore ground in the levels above is yet before this end, or we are probably now on the commencement of it, as it lengthens more towards the shaft in depth. The lode in the south end is also large, and mixed with lead and blende, and has a promising appearance.

GREAT WEST VAN.—T. Hodge, Oct. 13: Old Shaft: In the 40 west end no lode has been taken down since my last. In the 45 west end the lode is 4 ft. wide, composed of lime, lead, and quartz, and is yielding a very kindly lode. In the 34 east end, on the new lode, there is no change worthy of notice; a caunter branch will unite with it in a few fathoms further driving, at which point I expect our lode to improve. The 34 north cross-cut is extended from shaft about 34 fms.; we have a nice mineralised rock here, open and porous, and the fissures are well filled with lime and lead ore; this cross-cut is going out to prove the north ground, where veins are known to exist, and if we can strike a lode without doubt we shall find it productive. In a few days we shall put a pair of men to open an adit level in the eastern part of the property, where we believe to be the Merlyn vein. **GREAT W. LOVELL.**—Prisk, Oct. 14: The sinking of the shaft, winze below the 44 is carried on vigorously by nine men, at 25s. per fm.; lode 2 ft. wide, worth 15s. per fms. for length of winze—11 ft., and from the appearance of the ground in the bottom of the winze I think we are likely to have a regular well-defined and tin-producing lode as soon as the next level is opened up. In the 44 east I have set the men to drive 9 ft. north, as I think the tin producing part of the lode is still in that direction; this will be proved in a few days, price for driving 5s. by six men. In the 44 west we have four men sinking to prove a junction of two branches: in driving this level we have some excellent work in tin, four men are working here at 9s. per fathom. In the 34 east we have driven a caunter branch north and intersected a rich branch 5 in. wide, which will produce 4 cwt. of tin per ton of stuff, and in the bottom of the end we have a junction of two branches, which makes the lode larger and richer. I expect something really good at this point. My object in cross-cutting in the level below is to intersect this lode, which we hope to do in a few days. The winze in the 34 is suspended on account of having more water than we can properly contend against by manual labor; we hope to drain it from the level below shortly.

GUNNLSIAKE (Clitters).—W. Skelton, J. B. Skelton, Oct. 12: The engine-shaft is down below the required depth for 188 fm. level. The lode in the 178 east is sinking in back of the 80, east and west of flat rod shaft, is now worth about 24s. per fathom. On Tuesday last we sold 39 tons 11 cwt. of copper ore, which realised 322s. 18d., and hope to get a good parcel against the next sampling. The men engaged in driving the 30 cross-cut are making good progress, and we are daily expecting to cut the lode. Friday next being our pay and setting day, a full report shall follow.

HINGTON DOWN CONSOLS.—James Richards, Oct. 14: Bailey's Shaft: At this shaft, sinking below the 150, there is no alteration. The lode in the 150 fm. level west, where slope west of communication, is 4 ft. wide, and has improved, being at present worth 7 tons of ore, or 21s. per fm. There are two stopes working in back of the 150 west, in which the lode is worth on an average 8 tons of ore, or 24s. per fm. The lode in the two stopes in bottom of the 140 west, and east and west of Allen's winze, is still worth 8 tons of ore, or 30s. per fathom. In the 140 west driving is continued by the side of the lode; progress, however, is slow owing to ground being hard. In the two stopes in bottom of the 120 west the lode is worth on an average 6 tons of ore, or 15s. per fathom. In the 120 west the lode is still large, 5 ft. wide, consisting of quartz, capel, mudi, peach, and stones of ore. In the slope in back of the 110 west, and west of Kit's rise, the lode is worth 4 tons of ore, or 12s. per fathom. We have for sale on the 21st inst. (computed) 265 tons of ore.

ILLOGAN.—Richard Pryor, Oct. 13: On Friday last we set the deep adit cross-cut to drive south of engine-shaft, by six men, at 8s. per fathom. The ground is a little more spare for driving, owing to our having met with a vein of spar and mudi, which let out a large quantity of water, thus indicating a near approach to the lode.

KINGSTON CONSOLS.—G. F. Richards, Oct. 14: Favourable progress has been made with the different preparations for the dressing operations, and if we get fair weather we shall soon be ready to begin to fix the machinery. The repairs and alterations to the winding-engine having been finished, the same was started to work the steam-capstan on Tuesday last, all of which goes remarkably well. The shaftmen will complete all the necessary preliminary work in the shaft by the end of this week, and will be ready to commence sinking of the engine-shaft, which has already been set at 12s. per fathom, on Monday next. The pumping engine continues to work exceedingly well. Every possible effort is being made to complete all the other surface work.

LADWELL.—A. Waters, Oct. 14: There is no change here worthy of notice since my report last week.

LLANIDLOES.—John Kitto, Oct. 11: The new engine continues to work well, and the water is nearly down to the 24, and the shaft well and properly secured. I hope before this week is over to have the plunger pole changed at the 24, and the engine working its full stroke of 10 ft. As the workings below this level are much shorter than they are above, I hope will go on as well as the mine, and will be able to raise a dressing of ore commenced before the end of the present month. I am glad to say everything is now in good order, and progressing favourably, and I feel quite sure that our operations will be attended with great success.

MELINDUR VALLEY.—J. Kitto, Oct. 9: We are making very good progress with the sinking of the engine-shaft below the 25, and I am pleased to say the lode (which is about 4 ft. wide) continues to improve in character as we go down, and is now yielding a little lead ore, with every prospect of further improvement, and judging from the great change that has already taken place, I am decidedly of opinion that, in a few fathoms further sinking, we shall discover a paying and profitable mine. The underlay of the lode is still becoming less, and the prospects will fully justify the opinion above expressed. The lode in the 26 driving east is very large and kindly; but as there seems to be a great portion of it still standing on the north side, I have ordered a cross-cut to be put through in order to prove its full size and value. We have from 10 to 15 fms. more to drive to reach the run of ore ground discovered in the 14, and at this point I expect a very productive lode. There is no change to notice in the 14 driving east, but we are now getting very near the run of one of the bunches of ore passed through the slope in the back of this level is still yielding well, but the stopes above the adit level have got near the surface, and are not very rich. In the long cross-cut, driving towards the north lode, we have lately intersected a small branch, which I believe to be a flyer from the lode, and that we are in close proximity to the same. The ground, through which we are driving is in every way favourable to the production of ore, and I will entertain very strong hopes that we shall soon intersect a rich and profitable lode; in fact, I consider our present prospects to be far better than they have ever been before since we first commenced operations, and considering the comparatively small amount of capital actually spent in the development of the mine, the result has been, in my opinion, very satisfactory. We sold on the 3rd ult., to Mr. George Burr, 25 tons of lead ore at 13s. 12d. per ton, but this would have realised a much better price if we had machinery to crush and dress with. The pumping and winding machinery is all in good condition, and is working well.

NEW CHIVERTON.—J. Trewartha, Oct. 14: The engine shaft is down 5 fms. 3 ft. below the 35; ground still favourable for sinking, but the lode in this place is standing whole in the side of the shaft, as it is underlying for the present faster than the angle of the shaft, which is being sunk about the average underlie of the lode, consequently we shall expect it in the shaft again very quickly. The lode in the various points of operation, both on tutwork and tribute, will be taken down in a few days, and then I will advise you with regard to its value and prospects.

NEW PEMBROKE.—F. Puckey, C. Merrett, Oct. 11: In the 120 end, driving east of the engine-shaft, the lode is again looking more promising, yielding saving work for tin, and good stones of copper ore. In sinking and stopping the lode in the bottom of the same (120 fm. level), east of the cross-cut, the lode is 4 ft. wide, and worth for tin 15s. per fathom. In the 110 end, driving east of the shaft, the lode is still small and unproductive for mineral. In the rise in the back of the same level behind the end the lode is nearly 2 ft. wide, and yielding saving work for tin. In the slope in the back of the 110, east of the shaft, the lode is 4 ft. wide, and worth 12s. per fathom. In the slope in the back of the same level further east the lode is 5 ft. wide, and worth 15s. per fathom. The lode in the 100 end, driving east of the shaft, is full 4 ft. wide, presenting a very strong and kindly appearance, and is worth for tin and copper 15s. per fathom. In the rise in the back of the lode behind the end the lode is 5 ft. wide, and worth 7s. per fathom. In the slope in the back of the 100, east of the shaft, the lode is 2½ ft. wide, and worth 4s. per fathom. In the slope in the back of the same level, west of the shaft, the lode is 2 ft. wide, and worth 7s. per fathom. In the winze sinking below the 100, east of the shaft, the lode is 5 ft. wide, and worth for tin and copper 8s. per fm. In the slope in the back of the same level, west of the winze, the lode is 2½ ft. wide, and worth for tin and copper 10s. per fathom. In the 90 cross-cut, driving north-east of the shaft, we have intersected a north lode, and have commenced driving east on its course: the lode is 2½ in. wide, well defined, and composed of mudi and mudi, and good spots of copper ore. In the 75 cross-cut driving north no lode has been met since our last report. The ground is still favourable for driving.

NEW ROSEWARNE.—E. Hosking, W. Bennetts, Oct. 14: In the 67 we think more lode is standing to the north, and have placed the men to drive in that direction. In the winze and 68 end there is no change since the report for the meeting.

NEW SOUTH MERLLYN.—R. Rowlands, Oct. 14: We have suspended sinking the sump below the north level, and started to drive north. The vein is strong and very promising, and we are daily getting stuff for the dressing-floor, and using on the driving as fast as we can.

NORTH HENDRE.—J. Lean, Oct. 14: The ground in the north level appears much the same as for some time past, being composed chiefly of spar, sandstone, and clay, with occasional lumps of ore; we look for an improvement daily. In No. 1 south level the ground appears to be undergoing a change, more spar coming in, and a little more lead; judging from the kindly appearance of the end an improvement is close at hand. No change calling for remark has taken place in No. 2 south level, nor any other point; since the heavy rains the water has rather increased. To-day we have sold 40 tons of lead to Mr. Eytton, at 14s. 16s. per ton. **NORTH LAXEY.**—R. Rowe, Oct. 9: Setting Report: North Engine-shaft: Lodge to cut below the 121, by nine men, bargain 35s. The 121 to drive north by two men, at 7s. 10s. per fathom. The 84 to drive north, by four men, at 7s. per fathom.—Stopes: The 110 slope, by eight men, at 5s. per fathom; the 110 roof stopes, by four men, at 5s. 10s. per fathom; the 60 roof stopes, by two men, at 5s. per fathom; the 50 fm. level roof stopes, by four men, at 5s. 10s. per fathom; the 50 roof stopes, by four men, at 4s. 10s. per fathom; the 50 roof stopes, by six men, at 5s. per fathom.

NORTH LAXEY.—R. Rowe, Oct. 9: The north engine shaft is sunk 9 ft. below the 121, and the first or top lodge cut; and at the level of the present bottom of the shaft—that is 9 ft.—it is necessary to cut the tip lodge to receive the stuff from the sinking of the shaft and that of the 121 fm. level; the cutting of this tip lodge will occupy three weeks, and after that the sinking of the shaft will be set on contract to a full force of men, and will proceed with the utmost rapidity. The 121 driving south, is in a lode about 2 ft. wide, saving stuff for lead and blende, but we shall be obliged to suspend the driving of this end for the present, in order to facilitate the sinking of the north shaft. The 121 north has continued to open out some nice lead ground for stopes; last week the end encountered a cross slide, about 2 ft. thick, which covered the lode a short distance out of its course, and we have again just broken into it, and find it contains some good ore; this is important, being a stretch of ore ground further north than found in any of the levels above. The 24 end is at present unproductive. The stopes in the sole of the 110 are worth 1 ton of lead per fathom, and those in the 50 continue to be worth from 1 to 1½ ton of lead per fathom.

NORTH POOL.—W. C. Vivian, F. Clymo, Oct. 14: The lode in the 40 continues in a south-east direction, without the slightest deviation, with both walls mudi and well-defined, and of about 5 ft. wide. There are ribs of quartz, mudi, blende, and yellow copper ore near both walls, but with increasing distance from the south or foot-wall the lode is becoming easier for driving through. We have altogether lost the white iron since the great change in the direction of the lode from north-east to south-east, and the appearances are altogether improving as we advance in the new course which the lode has taken.

NORTH TREKERRY.—R. Pryor, Oct. 12: The lode in the stopes in the back of the 30, east of Highburgh shaft, is worth for tin about 17s. per fathom. The shallow adit level, driving west of Doctor's shaft, is worth about 20s. per fathom, with a very promising appearance. The ground in the deep adit cross-cut, driving south of Doctor's engine-shaft, has been undergoing a change during the past week, and from present appearances we have every reason to believe we are near the lode. All other places throughout the mine without change since last report.

OLD TINCROFT CONSOLS.—James Pope, Oct. 13: In the 30, west of Diamond shaft, the lode is worth for tin 7s. per fathom. In the 10 west the lode is worth for tin 10s. per fathom. The walls of the engine-house are completed, and the masons are preparing the roofing, which will be put on and completed by the end of the week if the weather proves favourable.

OLD TREBURGETT.—W. Harker, W. T. Bryant, Oct. 13: Setting Report: In the 90, south of the shaft, the lode is 4 ft. wide, of a kindly appearance, worth about 8s. per fathom, contract not out. The stopes in back of this level are set on tribute. In the 80 south the lode is 4½ ft. wide, of a very promising appearance, worth 5s. per fathom; contract not out. No. 2 winze below this level (worth for its length, 12 ft.) 30s. per fathom; contract not out. The 70, south of the shaft, by six men, the month, at 11s. per fathom; lode 6 ft. wide, worth 18s. per fathom. No. 1 slope in the back of this level, contract not out. No. 2, by six men, the month, at 5s. per fathom. No. 3 and 4 contracts not out. No. 5, by four men, the month, at 14s. per fathom; the stopes are worth in the aggregate about 50s. per fathom.

To strip down a portion of the western part of the lode in this level, by three men,

course; the part carried in the shaft is 1½ ft. wide, composed of capel, quartz, and good stone of copper ore, with every indication of a speedy improvement. In the 60 west the lode is imbedded in a massive bed of waste, and worth for tin full 40¢ per ton. In the winze sinking in the bottom of the 80, about 2 fathoms in advance of tails end, the lode is 4 ft. wide, and worth for tin 35¢ per fathom; we fully expect to communicate these points this month, which will give good results; tilation, and lay open a most valuable piece of tin ground available for stoping. In the 60 east the end men are at present engaged rising against the winze; in the lode is 3 ft. wide, and worth for tin 20¢ per fathom. The rise has drained the water from the winze sinking below the 60, the lode in the latter is 3¼ ft. wide, worth for tin 35¢ per fathom; these points are being forced on with all speed, and hope Williams's copper lode, is driven 23 fathoms; north of Harper's shaft, towards Williams's copper lode, is driven 23 fathoms; the ground is at present very hard and spare for driving, with an increase of water. No particular attention in any other part of the mine. The engine and pitwork are in good working order, keeping the water at about 3½ strokes per minute.

WHEEL UNY.—Wm. Rich, M. Rogers, W. Rich, jun., Oct. 9: The lode in the 160, east of engine-shaft, is worth 6¢ per fathom. The 180 west is without alteration to notice. The 150, west of incline shaft, is worth 12¢ per fathom. The 150, east of Gooding's, is unproductive. The 140, east of King's, is worth 15¢ per fm. The rise above the 100 is 150 cwt., towards Hind's shaft, is very hard; set to-day at 23¢ per fathom. The 130, east of King's, is worth 15¢ per fathom. The 120 east is worth 8¢ per fathom. The 110 east is worth 12¢ per fathom. The lode in the 60, west of incline shaft, is worth 7¢ per fathom. The rise above the 40 west is worth 5¢ per fm.

WILLOUGHBY.—H. Nottingham, Oct. 12: Goddard's Lode: The 13 end, driving south, is not looking so well as it has been, but is again improving. We are leaving a fine course of ore along the bottom here, which I expect to meet at the 23 when that end is advanced sufficiently to be in a line with it. The stope in the back of this level is yielding 15 cwt. of lead to a fathom. The stope below the 1st north of 3 ends is improving, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I have the winze through from the 13. I am expecting an early movement in the 23, and the 50 cross cut, west of group mentioned in last report, but we are not yet clear of it. The winze sinking below the 13, north of No. 8 shaft, is improving, worth ½ ton of lead per fathom. The stopes south of No. 8 shaft are worth each 15 cwt. per fathom. I have resumed the driving of the 23 south, and also commenced to stope the back of the 23, north of No. 1 shaft, on Goddard's lode. There is a nice open lode, containing a good deal of blende and a little lead, which I expect to see increase. If this prove to be sufficiently productive for stoping we shall cut this through from the No. 1 shaft to the other stope, which will enable us to cut the ground cheaper in the latter. This stope I do not intend to put up any higher until I

Towards the middle of last month Straits touched 88½, since then prices have given way a little. It is more than probable that at the end of this year the total stock

gram received—"Week's run, \$46,000; furnaces working well; drifting from winze; stopes looking well." The make of bullion for the season is \$91,000, and since February \$1,213,000. The refinery this season has produced \$693,000 in gold and silver, irrespective of refined lead. Dore bars to the value of \$26,000 were issued from the refinery last week. There are now three great points of interest in the mine—1. The continuation of the main lode.—2. The new discovery on the west side of the hill.—3. The strike of ore at the bottom of the main hoisting shaft, originally started in limestone, with the object of making it a key-work for hoisting and driving drifts to intersect the lode, from which it was distant some 200 ft., but which main shaft has now, at a depth of 760 ft., got into a bed of quartz ore, which, though as yet poor, has the promise, as the manager reports, of "argenteiferous ore beneath." If this promise is realised there will be three distinct mines on the Richmond property. Those who have studied the progress of the Richmond Mine from its commencement are familiar with its erratic nature, and the fact of several scares arising from the announcement that limestone had been encountered where ore was expected, news always followed at a short interval by the further statement of the ore body again making. This experience has been repeated in the last few weeks. The manager, for three successive weeks, at three different points on the main lode met with a body of limestone, where he calculated on finding only ore, and it appears by his report in this week's Journal that at each point amendment in the prospects occurred so quickly that the cable announced the great improvement in the mine by the time his reports were published. Bearing in mind the extremely irregular and jagged nature of the containing walls of the lode, it is only to be expected that the drifts and winzes driven through it will, at some points, run against limestone, and it is quite possible that portions of the overhanging walls may have broken off while the ore body was in a semi-fluid state, in which case the ore will probably be found filling up the caves caused by the fractures, and thus create still greater irregularities in its distribution. Within the last few weeks we learn that in sinking in the lode at 13 feet below the 600 limestone was struck in the winze; this was soon passed, and now over 40 feet depth more is reached. Between the 600 and 500 levels limestone was met with at 18 feet from the foot-wall, foreboding a very serious diminution of the reserves expected at this spot, and now we learn that at this very point the drift was soon through the exuding body, and is now 60 feet ahead, in good ore, and the end of the drift still promising for continuance. Again, at the 400 level the stoping was very disappointing, but now we learn that here also a promising ledge is opening out. In connection with these very cheering statements in the last report, the announcement in this week's cablegram that "the stopes are looking well," is a proof that the improvement is progressing. The return this week is not a bad average, but still falls short of expectations. As more and better ore is now coming out of the mine it is probable that an improvement in the weekly runs will soon take place. The small engine over the hoisting shaft will soon be displaced by the powerful machinery which will be forthwith erected, and which is equal to hoist from 2000 feet depth. As the Eureka Consolidated Company have just erected an engine of similar power, it is very evident that those at work on Ruby Hill have the fullest confidence in the permanency of its great lodes. The work of proving the new body of ore just struck on the Eureka Consolidated side of the boundary, and continued on from the Richmond side, does not appear to have made much progress since the former report, but enough has been done to enable the manager to report that there is now "quite a body of ore there." The question whether this new discovery is a bed or a lode can only be proved by sinking on it as indications are found of its going down, and work is now being done to reach what appears to be a foot-wall. It seems that a large quantity of lead escaped through the cracks in the calcining pans sent from France, and got into the flues, thus greatly impeding their draught. It is satisfactory to learn that the main engine is now in such good order, as well as the boilers and connecting machinery. The five months from the end of August may be considered as combining all the most favourable conditions for extensive and profitable working, and as the increased appliances for effecting greater returns are now available, it may be hoped that additional production will be realised both from the mine and the refinery.

We have been favoured with the following extract from a letter just received from an English engineer of high standing at San Francisco:—

"The yield of the Consolidated Virginia is now \$2,000,000 a month, and the mine never looked better. The adjoining mine, the California, is considered a still richer mine, and will commence to pay dividends on Jan. 1. Next year these two mines will pay \$40,000,000 a year in dividends. These mines are being worked at about 2000 ft. The report from Eureka that the 'Eureka Consolidated strike of quartz is scarcely distinguishable in character from that in the Comstock' is exciting hopes that it is well to keep in check till more facts are ascertained. It is never safe to depend on specimen assays, and samples said to indicate extraordinary averages per ton are not likely to have many fellows at the present comparatively shallow depth of the mine. Eberhardt and Aurora shares after improving 8½, 8½, close 8½; the first shipment of silver is expected to be received in a few days. The latest information is to the effect that the respective points of operation maintain their value."

In Foreign Gold Quartz Mines the principal feature has been a rather sharp fall in Del Rey to 300, at which price business was done, but the market quickly recovered, and closes 385 to 395. The latest telegram reports the produce for September at 46,000 oits., yield 88 oits. per ton; gross value of the month's produce 17,825½, which will give a profit of about 11,000, per month. The rains had set in, and all was going on well. Don Pedro, ½ to ¾. Chontales, ¾ to 1. Javali, ¾ to 1; the report of the meeting appears in another column. The report of the directors was adopted. At most recent advices are satisfactory; 30 stamps are now working, and a new turbine-wheel is about to be dispatched to the mine to replace that recently sent out, which had disappointed the expectation formed of it. Attention was directed to the value of the tailings; from assays of samples recently made in London it appeared the tailings yielded 1 oz. gold and 30 ozs. of silver per ton. Two important alterations were made in the Articles of Association, by which in future the qualification for directors is to be 200 shares, and their remuneration will to a great extent depend upon the returns and profits. Almada and Tinto ½ to ¾; Sierra Buttes, 1½ to 1¾; do. Plumas (Eureka), 1½ to 1¾. The Buttes clean-up for September is \$32,476; expenses, \$21,524; profit, \$10,952. The Plumas clean-up for September is \$33,576, and the expenses are \$19,535, leaving a profit for the month of \$14,041, in addition to 57 tons of sulphates saved, which are estimated to yield about \$50 per ton profit. Independence, 1½ to 1¾. London and California, 4 to 4½; shares are dull at the quotations, no cablegram of the clean-up having been yet received. Port Phillip, ½ to ¾.

Hydraulic Gold Mine shares have been fairly active. Blue Tent, 4½ to 5½; the work on the ditch is rapidly drawing to a conclusion, and will, it is confidently expected, be finished by the end of the present month. Some few necessary operations are being carried on at the mine to place them in a position for a steady washing when rains commence. Sweetland Creek, 2½ to 2¾; there is no news of importance from the superintendent. Washing has been resumed, and Mr. McLean expects that he will be able to make another clean-up about the end of November. Cedar Creek, ½ to ¾; the only work in operation is the Yankee Tunnel, which is being pushed on as fast as possible. The Yankee claim is presenting an improved appearance, indicating good returns when washing recommences. Birdseye Creek, 1½ to 2; Mr. Powers is getting everything ready for the coming season, and reports matters progressing in a very satisfactory manner. Oregon (preference), 4 to 4½; the superintendent is pushing on all the operations with the utmost dispatch, and is making rapid progress in completing the various works so as to take advantage of the first rains.

Van Consoles, 1½ to 2, and a good demand, with a scarcity of shares; Capt. Roach writes that he fully expects to reach a course of lead now the sinking of the new shaft is being carried down on the course of the lode. Glyn: Capt. Roach writes—"You will notice my remarks about the lode here; I feel assured that I shall not be deceived." Grogwinion, 3 to 3½; the main shaft will shortly be com-

municated to the bottom of the level, good progress having been made in sinking during the past month, and all points of operation looking as well as usual. Wye Valley, 4 to 5; the usual four-weeks sampling, of 30 tons of lead and 20 tons of blende, had taken place. The returns of lead are expected to be increased from the present time to 40 tons per month, and the manager anticipates making further discoveries in the 22 fm. level east, under the rich deposits in the 10 (the report in another column). South Cwmystwith, 1½ to 2; good lead is being got in the middle level, and the exploratory works are being pushed forward with vigour. Melindur Valley, 2 to 2½; the last report is encouraging, the lode having much improved in the shaft, now yielding lead, with prospect of further improvement as depth is attained. The lode is becoming more perpendicular in its position, and the manager is confident of making profitable discoveries. The report of the extraordinary general meeting appears elsewhere. West Wye Valley, 3 to 4; the mine adjoins Wye Valley, and is on the same lode. Active operations are to be at once commenced. Pennerley, 1½ to 1¾; there is but little alteration. The sinking of the shaft at Potter's Pit, below the 75, has been commenced. Bog, ¾ to 1; fair progress is being made in sinking the engine-shaft below the 175. The mine has slightly improved since last report.

Great Wheel Vor, ¾ to 1½; the lode in West Metal shaft is reported to have improved during the past week. Altogether the prospects are very good for a lasting mine in depth on further development. Chontales: Mail not arrived, owing to the loss of the Shannon last month, and a smaller vessel being employed to carry the home-ward mails. The despatches may be expected early next week.

Cathedral, 20s. to 30s.; the mine continues to open up well, and some splendid grey copper ore has this week been raised, the assays yielding 63½ per cent. for copper. The next sale of ore, on the 4th of next month, is expected to be one of the best yet made from the mine. Marke Valley, 3 to 3½; the report of the meeting appears in another column. Penstruthal, 10s. to 12s. 6d.; all work progressing well, and good substantial mine being opened up.

Subjoined are the closing quotations: Assheton, 1 to 1½; Bog, 5 16ths to 7 16ths; Carn Brea, 57½ to 60; Devon Great Consols, 2½ to 3; Dolcoath, 46 to 48; East Caradon, 1½ to 2½; East Lovell, 7½ to 8½; Great Laxey, 16 to 17; Great Wheel Vor, ¾ to 1¼; Hington Down Consols, ¾ to 1½; Marke Valley, 3 to 3½; Pateley Bridge, 6½ to 7; Parys Mountain, ½ to ¾; Pennerley, 1½ to 1¾; Roman Gravel, 12 to 12½; Tankerville, 10½ to 10¾; Tincroft, 25 to 27; Van, 28 to 30; Van Consols, 1½ to 2; West Bassett, 6 to 6½; West Chiverton, 15 to 16; West Tankerville, 1½ to 1¾; Penstruthal, 10s. to 12s. 6d.; Birdseye Creek, 1½ to 2; Blue Tent, 4½ to 5½; Cape Copper, 33½ to 34½; Cedar Creek, ½ to ¾; Colorado Terrible, 2½ to 3½; Eberhardt and Aurora, 8 to 8½; Emma, 1 to 1½; Flagstaff, ¾ to 1½; Javali, ¾ to ¾; Last Chance, ¾ to 1; Malpas, ¾ to ¾; Malabar, ¾ to ¾; New Quebrada, ¾ to ¾; Rica, ¾ to ¾; Richmond Consolidated, 9½ to 9¾; Sierra Buttes, 1½ to 1¾; South Aurora, ¾ to ¾; Sweetland Creek, 2½ to 2¾; Tecoma, ¾ to ¾; United Mexican, 3 to 3½.

NORTH LAXEY.—The north shaft is down 9 ft. below the 121 fm. level, and will be pushed down as fast as possible. The 121 south is 2 ft. saving work for lead and blende, and the 121 north has opened some good lead ground, with an improvement just come in the end, which is important, as it shows a lengthening of ore ground further north than in any of the levels above. There are 28 men stoping ore in the 50, 60, and 110 fm. levels. The Great Laxey Company have this week declared another dividend of 10s. per share (7500.) for the past quarter, and the shares have advanced to 17½, or at the rate of 255,000, for the mine. They also held their half-yearly meeting this week, when a most satisfactory report and accounts were presented. We hope to see North Laxey in something like the same position before long.

ROOKHOPE.—At the adjourned general meeting, on Thursday, a resolution was passed requesting the directors to call a special meeting to authorise the transfer of the property to another company proposed to be formed. It is suggested that the new company be in 15,000 shares of 30s. each, that 5000 of these shares be given as free or fully paid up to the present shareholders, and that another 5000 shares, also fully paid up, be given as a bonus, share for share, to those who subscribe for the remaining 5000 shares at 30s. each, payable in three instalments. The debts of the present company—say, about 1500l.—to be paid out of the above, which would leave 6000l. for working capital. Mr. Blenkiron reports that four men are stoping in the back of the 15 at 50s. per fathom, the lode worth 25 cwt. of lead per fathom; and six men in the 25, at 50s. per fathom, the lode worth 20 cwt. per fathom. There are four men making an air communication between the 15 and 25, which will be completed in a few days, when these men will be put to raise ore in similar ground to the above. Mr. Blenkiron states that the ore workings look better than when he last reported, and that having opened out a quantity of stoping ground in the backs of the 15 and 25 it will be worked at less cost when they suspend the driving. He regrets that the 42 has lately been suspended (owing to the want of funds), as it is from that part of the mine that permanent returns are to be expected. The 42 has to be driven only 30 fms. to be under the richest part of the lode in the levels above, and when that is reached a good paying mine is likely to be the result. There will be 30 tons of ore sold by the end of the month, and with the proposed new capital the property can, no doubt, be made very profitable.

GREAT LAXEY.—It is gratifying to find, from the report of the general meeting published in the Supplement to this day's Journal, that the financial position and prospects of the undertaking is in the highest degree satisfactory, and that complete unanimity exists among the directors. Mr. Barber being enabled at the conclusion of the business to congratulate the shareholders that they had at last had a meeting without a row. Gratuities of 50l. each were voted to the two agents, and to the secretary. Appropriate acknowledgements were made, Mr. Rogers especially valuing the vote because it would go with him as a character for the future.

BELSTONE MINING DISTRICT.—From the long experience Mr. John Calvert has had in the Belstone district, it will be gratifying to a large number of those engaged in its development to observe that he has made an elaborate report upon the district, which appears in another column, and in which he states that where the big lode is seen in the Belstone Company's property at 100 fathoms in depth, settled between two regular walls, this undertaking will increase immensely in value, and that a brilliant and successful future is in store for the proprietors.

PATELEY BRIDGE LEAD MINES AND SMELTING COMPANY (LIMITED).
MESSRS. F. W. MANSELL AND CO. (SWORN BROKERS) are in a position to afford the LATEST INFORMATION from these VALUABLE MINES, and strongly recommend the immediate PURCHASE of the SHARES.
14, Pinner's Hall, Old Broad-street, E.C.

THE PATELEY BRIDGE LEAD MINES AND SMELTING COMPANY (LIMITED).
WANTED, TWELVE SINKERS, TO CONTRACT, BY TENDER, FOR SINKING THE ENGINE SHAFT 11 fathoms in limestone. Good blasting ground.
All particulars may be obtained on application to the office, on the above mines, near Pateley Bridge, Yorkshire.

WANTED, by the Advertiser, a Position as WORKS MANAGER in an IRON WORKS in ENGLAND or on the CONTINENT. Is thoroughly practical; profit, workmanship, and quality guaranteed. First-class references given. Security if required.
Address, "M. B.," MINING JOURNAL Office, 26, Fleet-street, Lond. E.C.

WANTED, for the HAWNE COLLIERIES COMPANY (LIMITED), a horizontal WINDING ENGINE, 56 inch cylinder, 5 or 6 feet stroke with 14 test drum. Also, BOILERS, adequate for the same.
Address, "Secretary," 9, Bucklersbury, E.C.

TALARGOOCH MINE, DYSETH, NEAR RHYL, FLINTSHIRE.
WANTED, a MINING CAPTAIN, for the ABOVE MINE.—A competent knowledge of machinery and engineering, as well as of underground work, required.
Apply, with references, qualifications, and terms, to the Chairman of the Talargooch Mining Company (Limited), Box 22, Chester.

CARBONATE OF BARYTES.
WANTED TO PURCHASE, in small or large quantities, up to 2000 tons. State strength, and lowest price delivered on rail or board of ship, to W. BOUSTED, Barytes Manufacturer, Yockleton, Salop.

WANTED, a SET of BORING APPARATUS, complete.—Offers, stating price and description, to "A. D. M.," Post Office, Newham, Gloucestershire.

PARTNER WANTED, an ENGINEER, to JOIN in a CONTRACTORS, IRON, STEEL, HARDWARE, and MACHINERY COMMISSION BUSINESS, recently established. A good opening for an energetic gentleman.
Apply by letter to "M. F.," care of Housekeeper, 122, Cannon-street, E.C.

COLLIERY MANAGER.

WANTED, by the NEW SHARLTON COLLIERIES COMPANY (LIMITED), for their COLLIERY, near WAKEFIELD, a RESIDENT GENERAL MANAGER, accustomed to direct a large concern in all departments, and well acquainted with the commercial business of a colliery, Address, stating age, occupation, and salary required, and forward testimonials to The Secretary, New Sharlton Collieries Company (Limited), 110, Cannon-street, London.

ORES, &c.

ARMAND FALLIZE, INGENIEUR-CIVIL, A LIEGE (BELGIUM).
BUYER OF
ZINC AND LEAD ORES MIXED TOGETHER.
Particulars by letter.

CAPPER PASS AND SON, BRISTOL

ARE PURCHASERS OF
ANTIMONIAL or HARD LEAD, LEAD MATTE, LEAD SLAGS, LEAD ASHES, SULPHATE OF LEAD, COPPER SLAGS, COPPER REGULUS or MATTE, TIN ASHES, and TIN SCRUFF.
MIXED METALS and DROSS, containing LEAD, COPPER, TIN, or ANTIMONY.

HENRY SEWELL, M.E.,
LONDON ADDRESS,—10, UPPER WESTBOURNE TERRACE.

CALIFORNIA, NEVADA, UTAH, COLORADO, AND THE PACIFIC COAST OF MEXICO.

E. N. RIOTTE, M.E.,

After Fifteen Years' Practical Experience in the above States, has established himself as CONSULTING ENGINEER in SAN FRANCISCO. Reports on Mines, as well as their metallurgical establishment, attended to by letter or cable. Stetefeldt Chlorination and Quicksilver Furnaces a speciality. For references, by permission, apply to GEORGE BATTERS, J. Austinfriars, London.

Address,—330, PINE STREET, ROOM No. 9, SAN FRANCISCO.

CALIFORNIA.

RIOTTE AND BEYEA,

MEMBERS OF THE SAN FRANCISCO STOCK EXCHANGE, STOCK AND MONEY BROKERS, STATE AND CITY SECURITIES, MINING STOCKS and BONDS, bought and sold strictly on commission.
330, PINE STREET, SAN FRANCISCO (Room 9).

RICHARD P. ROTHWELL, C.E., M.E.,

MINING AND CIVIL ENGINEER,

27, PARK PLACE, NEW YORK.

Vice-President of the American Institute of Mining Engineers; Member of the American Society of Civil Engineers; of the North of England Institute of Mining Engineers; of the Geological Society of France, &c. &c.; Editor of the Engineering and Mining Journal, New York.

Reports on Mineral Properties, and on the Working and Management of Mines, ADVISES AS TO THE VALUE OF AMERICAN MINING STOCKS AND INVESTMENTS.

A thorough technical education and long practical experience in Mining in various parts of Europe and America, enable Mr. ROTHWELL to give SAFE ADVICE; and his position as Editor of the leading Mining Paper of America affords him unusual facilities for knowing the ACTUAL VALUE of American Mining Securities and the standing of companies.

References: The Presiding Officers of the American Institute of Mining Engineers, and the American Society of Civil Engineers.

BRYDON AND DAVIDSON,

ENGINEERS,

WHITEHAVEN.

IRON AND BRASS FOUNDERS.

MAKERS of all kinds of BOILERS: PUMPING, WINDING, and HAULING ENGINES, and MINING MACHINERY generally.

AIR COMPRESSORS, CRANES, CRAB WINCHES, MORTAR MILLS, PUMP PIPES, &c.
CASTINGS OF ALL KINDS.

LEGITIMATE HOME MINING.—**TRETOIL MINE**,—produce, Tin, Iron, Copper, Sulphur. **CARRIGAN MINE**,—produce, Tin, China-clay. Full particulars as to these valuable properties may be had on application to the Managing Director,—

J. FLETCHER PAGEN,

CHAPEL HEYS, NEAR BODMIN.

CITY MINING AND ASSAY OFFICES

(FORMERLY CITY SCHOOL OF CHEMISTRY),

3, BLOMFIELD STREET, LONDON WALL, E.C.,

CONDUCTED BY

RICKARD AND GLEDHILL.

ASSAYS AND ANALYSES OF ALL DESCRIPTIONS.

MINE INSPECTIONS AT HOME AND ABROAD.

NEGOTIATIONS FOR MINING PROPERTIES UNDERTAKEN.

COAL MINES REGULATION ACT, 1872.

EXAMINATION FOR MANAGERS' CERTIFICATES OF COMPETENCY.

DISTRICT UNDER THE CHARGE OF THOMAS EVANS, Esq.,

H.M. INSPECTOR OF MINES.

NOTICE IS HEREBY GIVEN, that an EXAMINATION for MANAGERS' CERTIFICATES OF COMPETENCY, under the above-mentioned Act, will be held on the 28th and 29th days of October, 1875, and CANDIDATES INTENDING TO PRESENT THEMSELVES AT SUCH EXAMINATION must, on or before the 25th day of October, notify such intention to the Secretary of the Board of the above-mentioned district, from whom all information as to particulars can be obtained.

By order of the Board,
WILLIAM SAUNDERS, Secretary,

The Wardwick, Derby.

N.B.—Persons who do not reside within the district are equally eligible for examination with those who do.

EXPLOSIVES ACT, 1875.

(38 Vic., c. 17).

NOTICE IS HEREBY GIVEN, that the DOCUMENTS herein-after named appeared in the London Gazette of the 8th October, 1875:—

(1).—PROPOSED RECOMMENDATION as to an Order in Council relating to SMALL FIREWORK FACTORIES.
(2).—Ditto ditto STORES for GUNPOWDER exclusively.
(3).—Ditto ditto STORES licensed for MIXED EXPLOSIVES.
(4).—PROPOSED ORDER of Secretary of State adapting GENERAL RULES to the PACKING OF EXPLOSIVES other than Gunpowder.
(5).—Ditto MAKING BYE LAWS as to the CONVEYANCE, LOADING, and UNLOADING OF EXPLOSIVES.

Copies of these documents, together with copies of an Order in Council classifying Explosives, can be purchased of the following Booksellers, at 1d. each:—

WILLIAM CLOWES AND SONS, 13, Charing Cross.

HARRISON AND SONS, 59, Pall Mall.

W. H. ALLEN AND CO., 13, Waterloo-place.

W. MITCHELL, 39, Charing Cross.

LONGMAN AND CO., Paternoster-row.

TRUBNER AND CO., 57 and 59, Ludgate Hill.

STANFORD, Charing Cross.

H. S. KING AND CO., 65, Cornhill.

KNIGHT AND CO., Fleet-street.

GRIFFIN AND CO., The Hard, Portsea.

A. AND C. BLACK, Edinburgh.

ALEXANDER THOM, Abbey-street, Dublin.

E. PONSOMBY, Grafton-street, Dublin.

THE PATENT GUNPOWDER COMPANY

(LIMITED).

NOTICE TO MINE CAPTAINS AND ENGINEERS OF COLLIERIES AND GRANITE MARBLE QUARRIES.

The POWDER of this company can NOW BE SUPPLIED.

PERFECT SAFETY IN USE AND STORE.

FREEDOM FROM SMOKE.

Sample charges for trials and agencies granted on application to the SECRETARY at the offices of the company,—

6, GREAT WINCHESTER STREET BUILDINGS, LONDON.

Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt; it then forms an accumulating useful work of reference.

BLASTING IN COAL MINES.—I have carefully read the letter of "An Engineer," in the Supplement to the Journal of Oct. 2, but cannot comprehend what conclusion he would wish to be drawn from the particulars given. He shows that only five-eighths of the number of shots are fired in mining by long wall as are necessary in pillar and stall working; but, inasmuch as he shows that long wall working requires twice the quantity of powder to be used, I conceive that there is a fair set-off. Perhaps "An Engineer" will further explain his meaning.—A. PILLAR AND STALL COLLIER.

NASCENT COPPER PROCESS.—Will you be good enough to correct the two following errors in my letter, published in the Supplement to the Journal of Oct. 9? In the third paragraph and the third line it should have been "130,000" instead of 130, as printed. In the fourth paragraph and the thirty second line it should have been "so as to have" instead of "or such as have," as printed.—C. E.

SOUTH STAFFORDSHIRE COLLIERY COMPANY.—Some time ago I took some preference shares in the South Staffordshire Colliery Company (Limited). These shares were to receive 12 per cent. per annum, payable half-yearly, before the deferred shares received any dividend. It is much more than six months since I took my shares, but I have not received any dividend. I shall be glad if any of your readers can and will inform me what the company is doing, and what prospect there is of a dividend being paid.—PREFERENCE SHAREHOLDER.

ONE CRUSHING MACHINERY.—Can any of your correspondents give me any particulars concerning the "patent ball pulverisers" for wet or dry crushing, made by Hendrie Brothers and Bolthoff, of Central City, Colorado, U.S.A.? Any details of the method employed, with cost, &c., will be much appreciated by—G. R. F.

MINE SECTIONS.—"F. H." (Hanley).—The Mining Record Office, connected with the Geological Survey, is at the Royal School of Mines, Jermyn-street. All sections, &c., obtainable have been preserved there, but since the deposit of them has not been compulsory until quite recently, you can only learn on application whether the particular section you require is there. Write to Mr. Robert Hunt, F.R.S., the Keeper of Mining Records, and he will give you every information.

NICKEL AND COBALT.—"H. K." (Brighton).—There can be no doubt that the demand for nickel is constantly increasing, and the introduction of nickel coinage would have an enormous influence upon the market. The distaste for nickel coinage in Europe has, no doubt, arisen from the low quality of alloy used. The United States nickel coinage, however, is excellent, and almost as clean looking as silver.

THE BARTLEY COLLIERY EXPLOSION occurred Jan. 16, 1862; 202 persons were killed. The Bartley explosion occurred December 12, 1866; 340 were killed.

RIVET-MAKING MACHINERY.—Will some reader oblige me in next week's Journal by giving the address of Mr. Vincent, or the manufacturers of his patent rivet-making machine, illustrated and described on page 1017 of the Mining Journal, for Sept. 11?

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

THE SUPPLEMENTARY SHEET.—We have received occasional complaints, and of late a good many, that the Journal is delivered by country booksellers without the Supplement. Subscribers would oblige us by demanding that the paper should be handed to them complete, as every Journal is accompanied by the Supplement when it leaves our office, and the fault of omission must rest with the country bookseller or their London agent.

Received.—"M. N." (Philadelphia).—"Patentee" (New York). We should like to have the particulars—"J. C."—"D. E. L."—"W. C."—"Shareholder" (Wheat Grenville).—"Shareholder" (Van Consoles). Write to the Secretary, who will inform you when the next meeting is to be held—"Cornubensis." We will endeavour next week—"M." (Cambuslang). The company is not in existence, and we do not know where any information can be obtained.—R. Symons (Truro) on Mine Brokers next week—"A Shareholder" on the Central Swedish Iron and Steel Company next week—"Contributor"—"Shareholder" (Wheat Uny).

AMERICAN SUBSCRIBERS.—In reply to several enquiries, it may be stated that subscribers in the United States can be supplied with the Mining Journal, post free, at the price of \$8 50c. gold per annum, payable in advance, by remitting to Mr. D. Van Nostrand, publisher, and importer of scientific books, &c., Murray-street, New York; or, direct to our Office, 26 Fleet-street, E.C.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, OCTOBER 16, 1875.

THE IRON AND COAL TRADES.

The condition of these in anticipation of the forthcoming winter is exciting much apprehension throughout most of the country. Our district correspondence is conclusive upon this point, but whilst this may well be quoted to the general reader, the man having an enlarged connection with either of the industries will have been persuaded from his own practical knowledge that there is much room for apprehension, and, therefore, for forbearance upon all hands. The intelligence from the North of England of mills and forges being about to be wholly or in part laid off in and around Stockton in particular, coming immediately upon the compulsory stoppage of at least two other finished-iron firms in the Cleveland district, is of itself significant enough, but when it is known that all the Northern finished-iron making localities tend in the same direction, the facts are not cheering, and should be admonitory; for we know the prostrate state in which Wales is now found, and the condition of things throughout North and South Staffordshire, though not, perhaps, so painful as in Wales and Cleveland, yet is tame enough, and promises to become more than heretofore dull when the orders now in hand on account of the shipping season shall have been got out of hand. Nor are the prospects greatly improved by the circumstance that the stocks of pig in Cleveland are being reduced. Unhappily, they are increasing throughout Scotland, and the make in the North of England is less than last year by 6000 tons a month. Inasmuch as Germany and Scotland are taking large consignments of North of England pig-iron, it may fairly be assumed that certain of those sales will meet the finished-iron maker of England upon his own ground at home, and also abroad in the shape of the completed product. In this connection it is not pleasant to learn that the North-Eastern Railway Company are believed to have given to a Belgian firm the order for the bridge to unite the two portions of their line in Sunderland. Seeing the extent to which Belgium has been lately taking pigs from Cleveland, it is not at all unlikely that some of that raw iron will be returned to this country as girders for the Sunderland bridge.

We are not surprised that under such circumstances iron and coalmasters should be wishful to reduce their expenses, and that they should aim at the reduction by, amongst other means, lowering the current rate of wages. If notices have been given by the ironmasters in the Southern Principality to terminate existing contracts with their men, it is assumed that this is the object contemplated. The finished ironworkers in the Cleveland district have an agreement with their men extending to the close of this year. But how long the Durham mineowners will be able to continue to pay the current scale of charges at the pits is a very doubtful matter when the ironmasters to whom they sell their coke are able to pay them so little for that product, and when the competition with the London and shipping markets is so considerable.

It is certainly an unsatisfactory feature of the trade that ironworkers and colliers so persistently resist reductions; indeed, in some cases agitating for advances. How unreasonable, for instance, the opposition of the Parkgate ironworkers, who not only resisted a 5 per cent. drop, but subsequently stood out even against the modified drop of 2½ per cent. for millmen, and 3½ for puddlers. Then, the proceedings of the Staffordshire colliers we should term extraordinary if we had not given up applying any such designation to the conduct of Unionist miners. They are under agreement to accept wages regulated by the price of a certain class of coal, and they know well that if that coal should be advanced in price the drooping iron trade in their district would be for a time almost annihilated, yet we find them waiting through their Union agents upon the coal and ironmasters at their meeting on Thursday last in Birmingham, desiring that coal should be put up in price, and that their wages should be proportionately advanced. Previously numerous meetings had been held all through South Staffordshire with a view to bring all possible pressure to bear upon the employers, even to the threats of breaking through the bargain which was entered into between themselves and their masters at the close of the last long strike. Whilst this is going on in England and Wales, we have Mr. MACDONALD recommending the miners and

colliers in Scotland to demand higher remuneration, and the colliers in North Wales are following a reduction of 12½ per cent. awarded upon the facts by the arbitrator (Sergt. WHEELER, Q.C.) by determining to give notice for a rise in wages of 20 per cent. When will our colliers and ironworkers learn that in a time of such depression as now distinguishes all the markets throughout the old and new world alike, their common interest requires a policy of ready co-operation with their employers? Months ago we said that the trade has not yet touched bottom, that it would not permanently revive till bottom had been touched, and that the aim of masters and men should be to as quickly as possible bring matters to that point, so that the inevitable improvement might the sooner begin. This we still say. An improvement will occur, and if men and masters can act together, the men resolving to be really helpful and not obstructive, it will come about early, if not, it will be delayed to the loss and suffering of both.

MINING AND SCIENTIFIC EDUCATION.

Last week an event which for a long time past has been looked forward to with very great interest took place with more than usual éclat at Leeds. We allude to the formal opening of the Yorkshire College of Science. The ceremony was performed by his Grace the Duke of DEVONSHIRE, Chancellor of the University of Cambridge, and to no more worthy hands could it have been entrusted. His Grace, whilst well known for his scientific acquirements, is about the largest mineral owner in Derbyshire, as well as a large holder in Yorkshire, and in the neighbourhood of Barrow, in Lancashire. He is also Chairman of the Barrow Iron and Steel Company, the largest producers of Bessemer rails we have, and who are now engaged in sinking to one of the principal seams of coal in South Yorkshire. The College was for a considerable time before the public, but subscriptions did not flow in so fast as was expected, whilst it was determined by the promoters not to commence actual operations until the sum of 20,000£ had been promised or obtained. That amount was only realised in April, 1874, shortly after which preparations were made for receiving students and appointing professors. A considerable sum was raised for the purpose of endowing a chair of mining and geology, the list being headed by the Lowmoor Company, of which the Right Hon. G. HARDY, M.P., is one of the partners, with 1000£, and the Bowling Company and the Messrs. CHARLESWORTH 500£ each. In no part of the kingdom is a mining school more necessary than in the West Riding of Yorkshire, seeing that in one part alone, embracing an area of a very few miles, the destruction of life from explosions has been greater than has been known to have taken place in any one county in the kingdom. We are, therefore, glad to find that a chair of mining and geology has been established, and that Mr. GREAN has been appointed the first professor. No more suitable man could have been placed in the position, seeing that for many years he was connected with the Government Geological Survey in South Yorkshire, and is, consequently, well acquainted with the coal field and its varying formation. We have, therefore, not the slightest doubt but under his tuition many young men will receive an education fitting them to take the position of colliery managers, of which there is at the present time a great dearth. It is also likely that civil and mechanical engineering will form a part of the education of the College, with professors attached to them. But much, of course, will depend on the liberality of the public. The present sum subscribed amounts to close upon 40,000£, of which about 6500£ was given on the occasion of the inauguration, the Duke of DEVONSHIRE giving a second 1000£. Already Sir TITUS SALT and other gentlemen have founded scholarships, and there is certainly no reason why their example should not be followed by some of our wealthy colliery owners and ironmasters, in which excellence in geology, mining, and mechanics should be the test. We hope to see the Yorkshire College of Science located in a suitable building and well endowed, believing that it will not only be a centre of intelligence for the West Riding, but that it will be the means of giving a scientific education to those engaged in pursuits where such is essential to the safety of large numbers.

INSURANCE AGAINST MINING AND OTHER ACCIDENTS BY WORKMEN.

Working men, and especially those engaged in coal and other mines, have often been urged whilst in health and in the receipt of good wages, to make provision against accidents, ill-health, or death, for the benefit of themselves or their families. Many ways have been pointed out how this could be effected at a trifling cost, and Friendly Societies have been established for the purpose of affording relief in sickness, and giving a small sum to a member at death; but the relief afforded by them has been of but a temporary character, for when death has overtaken the bread winner about sufficient money is given from the society to which he belonged to pay the burial expenses. After that last scene has been enacted the wife and children have to seek refuge in the workhouse. Again, in the event of a man being permanently injured, not only is he but all his family as well left dependent on parochial relief, although previously with the wages he received he might have provided against being placed in such a position. To place workmen in a better condition than what we have described Mr. C. MARKHAM, the managing director of the Staveley Coal and Iron Company, initiated a scheme which has turned out most successful, and to which our attention has been drawn by receiving a copy of the report and balance-sheet for the last year, and to which we would draw the attention of colliery owners and employers as showing how much good can be done at a comparatively small cost. The Staveley Company employ something like 5000 hands, having eight large collieries, ironstone mines, and two very extensive foundries. Through the managing director, chapel and school accommodation has been provided, as well as a library, reading room, dining hall, &c.

In 1867 Mr. MARKHAM proposed on the part of the company to subscribe annually a considerable sum if the men would do likewise to establish an accident fund. This was agreed to, and the first meeting took place in the year named. From that time to the present we find that the total amount subscribed by the workmen to the Club and Accident Fund was 34,299£ 1s. 5d.; and by the Staveley Company 3765£ 5s. 4d., as well as 932£ 16s. 4d. interest, making the total receipts 38,997£ 3s. 1d.—a truly magnificent sum for the benefit of the workmen of one company solely. Of that sum there was paid in weekly payments, gifts to members and medical attendance, 27,317£ 8s.; in death payments, 7010£ 4s. 1d.; whilst there were subscriptions to the Chesterfield General Hospital, 600£. For the whole of the work done in connection with the Fund during last year, including the secretary's salary, stationery, &c., the sum paid was only 40£ 7s. 6d. Deaths and permanent injuries appear to be well provided for, so that a man or his wife is placed in a position of entering into some business suitable to their position. Thus one man who lost his sight by an explosion of gunpowder received 100£, another whose thigh was injured by a fall of bind received 100£. Two men, who each lost an eye, received a, no doubt, welcome solatium in the shape of 25£ each, whilst in another instance a poor fellow who received a compound fracture of both legs has his pain to some extent assuaged by the sum of 100£. Even in comparatively trifling cases relief was given, for one man who had a hand injured by a fall of clod received 25£, and another who was struck over the eye with a piece of coal 24£. As showing the liberality of the company, we may state that last year whilst the men subscribed 1729£ the former gave 432£, being equal to 25 per cent. on the total amount subscribed by the workmen. It appears, however, that in addition to the Accident Fund there is also a Sick Fund, to which the men last year subscribed 3459£, out of which there was paid to sick members and for medical attendance 2952£; in gifts to members in exceptional cases of distress 254£, whilst a subscription of 100£ was given to the Chesterfield Hospital.

As mining accidents are sometimes attended with the loss of a great many lives, Mr. MARKHAM, who is the Chairman of the Accident Fund Committee, has pointed out the desirability of appropriating some portion of the subscriptions of the Staveley Company as a reserve fund, until it should amount to about 5000£, "so that provision may be made for the members in the event of any exceptional calamity taking place." One great advantage of such a fund

as that at Staveley is that it does away with all special charitable appeals to the public, and infuses a spirit of self-reliance and independence amongst the workmen. Such liberality as that shown by the company, too, cannot fail to be appreciated by the men, and tend to draw together more tightly those kindly and harmonious feelings which should exist between workmen and masters, and which it is to the interest of both to cultivate. We believe that if other companies and firms would adopt a course similar to that at Staveley they would find it the reverse of disadvantageous, seeing that good and steady workmen are generally attracted to those places where they find special benefits provided for themselves and their families. The machinery is simple and inexpensive, and anyone desirous of adopting such a scheme as that which has been so successfully worked out at Staveley we believe will receive all the necessary information on applying to Mr. MARKHAM, to whose courtesy we have been indebted for the information contained in this notice.

OUR EXPORT IRON TRADE.

So far as our railway iron is concerned, the course of the foreign demand for the products of our metallurgical industry must still be said to be discouraging. Thus, the total exports of our railway material in September were 55,494 tons, as compared with 61,799 tons in September, 1874, and 92,140 tons in September, 1873. Continued retrogression is, accordingly, the prevailing characteristic of the situation. We are doing a good railway iron business with the North of Europe, and also with British America, British India, and Australia; but as regards our exports of railway iron to the United States there is still a most alarming declension. Thus, the exports of British railway iron to the Great Republic positively sank in September to a poor 34 tons, while in September, 1874, they stood at 6923 tons, and in September, 1873, at 10,642 tons. If we take the shipments of British railway iron to the Americans for the nine months ending Sept. 30 this year we arrive at an aggregate of 17,625 tons, against 85,454 tons in the corresponding period of 1874, and 151,972 tons in the corresponding period of 1873. In other words, the American demand has been less than one-eighth this year what it was in the corresponding period of 1873. Such an immense change within such a comparatively limited period is probably unprecedented in the annals of the iron trade, and it has certainly exercised a most disastrous influence on the course of business in this now waning twelve months. The Americans are going in very extensively for steel rails, as they conclude that they last seven times as long as iron rails; and, of course, this policy has a tendency to restrict the consumption of rails of every sort and kind. Moreover, as the Americans have now the means of making 350,000 tons of steel rails annually at American works, they are not very eager to come to England for them. These facts, coupled with the third circumstance that the American railroad interest has not at present quite recovered from the effects of the disastrous JAY COOKE panic, explain the extraordinary contraction which has occurred this year in the American demand for our railway material, and which, we fear, is the main cause of the great depression which now affects the iron trade of South Wales.

The consumption of our railway iron in Australia, after making very rapid progress for some time, has at last sustained a check, the exports to the Antipodean group of colonies in September having been 4750 tons, as compared with 6235 tons in September, 1874, and 3915 tons in September, 1873. In the eight months ending Aug. 31 this year the Australians took from us 59,024 tons of our railway iron, while the corresponding exports in the same direction in the corresponding period of 1874 were 61,487 tons, and in the corresponding period of 1873 17,219 tons. The great progress made in 1874 over 1873 has thus been scarcely sustained this year, but still the Australian demand has furnished this year a very valuable, not to say precious, contingent of orders. As we have on more than one occasion observed, there seems a very fair chance of the Australian demand, which has ranked third in importance this year, continuing upon a considerable scale for some time to come. The credit of all the Australian colonies—Victoria, New South Wales, Tasmania, South Australia, New Zealand, and Queensland—is excellent, and even Western Australia has appeared as a successful borrower, and upon the Melbourne market too. Population is steadily accumulating in all the Australian colonies, and varied industries are being developed in them; it is this progress which gives strength to Australian credit, and as the Australians are a region of magnificent distances they appear likely to afford ample scope for the railway engineer for many yet unborn years. The question, of course, arises whether the Australians will not manufacture for themselves the railway iron which they will thus require. It is possible that they may do so, and certainly iron ore is not altogether lacking at the Antipodes. But still the average Australian obtains at present a comparatively easy livelihood in other pursuits, and there are also other ample openings for the employment of Australian capital. Under these circumstances the Australians may be content for several more years to purchase their rails in the Old Country.

PREVENTION OF COLLIERY ACCIDENTS.

Mr. H. DEFTY, of Middlesbrough, desires, through the Mining Journal, to offer to all colliery owners, free of charge, for humanity's sake, the use of his patent motion regulator, and writes that he would further assist in carrying the plan out at any colliery. He estimates that 50£ will find all material, and would remove all fear that accident might be caused by neglect on the part of the person in charge of the winding machinery. He has confidence that his invention would do something towards putting an end to these daily accidents. Mr. Defty explains that in putting his invention into practice as applied to the winding apparatus working at the mouth of the shaft he fixes two levers, or a series of levers, rods, wire-ropes, and the like arranged and fixed, according to the circumstances of each particular case, to the post or framing which supports the gin; or to an independent framing erected for the purpose. When the cage rises it acts one of the ends of one of the levers, thereby closing the throttle valve of the steam-engine to which the lever is connected, and thus shuts off the steam, at the same time the rising tube or vehicle lifts the other of the said two or more levers which are connected with and operate the hand or other gear of the engines, and immediately reverse the action of the slide or other valve gear, applying brake at the same time by connections with ropes and rods, thus steadying the reversing motion of the engine. The rising tub, or vehicle, is thereby stopped, and safely landed in the keps without risk of accident or damage, or injury to the working machinery, and without the interference of those in charge thereof.

By varying the arrangement of the apparatus, it can be adapted and applied to all kinds of machinery, and to operate on the different descriptions of valves, cocks, slides, and the like. Locomotive arrangements are worked by wire screw pinions. Levers on the axle working as to suit the revolutions, or a distance required to move levers, acting against blocks or switches at various distances, fixed to catch or strike levers, first cutting off the steam, finally reversing at the destination or station, to stand or return, secures a perfect control of the motion. The same can be arranged to work signal wires, should there be danger at any junction or particular point on railways, for daily use; in case of foggy weather, this improvement can be fixed suitable to hand levers, or operated by wheels acting on the throttle valve or reversing gear of the engine; in all cases the supply of steam can be regulated with the greatest accuracy and perfect ease, instantaneously effecting the efficient safety required. It is evident that steam-engines and machinery operated thereby, being thus placed under such thorough control, much damage and many serious injuries will be effected. Consequently a great saving of time and money will be effected. Accordingly, he remarks, can only occur by neglect in adjusting his simple apparatus to the valve or handle gearing or brake at one time. This will in no way deteriorate or interfere with the power or general working of an engine or machinery. Block pin clutch wheels, or levers, are fixed to the point by the manager, to obviate all fear of danger that may arise by suspending alip hooks, or any other arrangement known. This is in no way a resort after the cases is

given, but security, to pens, wi

COAL-J was laid Mr. W. S. neglecting ventilation the Crow spectors. a separate tilation si seam, including, tained, fo

Crow coal inspecto there had as libelle complie sign the r inspection regularly he must h gularity o

The Co Explosion sider what committe tenance of in the Wi and by wi and 354 c scribed, at It is estim meet the remains u expected rief, and

TRADE in its bear Act, compels t the rights ment), at offices for forwarded interested

NATUR in Penney who are u at their w now be ab brough to had been from two Bennett, from a w sure of th a journeye will be in have gas, Messrs. G the revolvi iron state sent know and Co. a successful likely to see what vantly im the Kogor plates in Burchele increasing of gas and American

MINING of Spain, in the ord Huelsa, S &c. The from 250, there were the produ stone, and

GOLD D in Victoria a small s which ha of specim 1000 oza other par was 1725 any mine when the traordinar generally

BRITISH Mr. HENR Steamer c an l' of the contr property Mr. Sewe the severe treatment capable of (Mr. Sewe the latest been intr year 1865 practical able valu elated upon whilst on visit. As rigour and his career suffice to ystwith v manufacture and conce ystwith, wheels, j As the wi muleback should be that the r maintaini nes via P of the ma be conduc

given, but a preventive of causes of any overdraw, and gives security to all connected with the working of the same at little expense, without any alterations.

COAL-MINES INSPECTION.—An information before the Sheriff was laid by Mr. Ralph Moore, the Government Inspector, against Mr. W. Swan, manager to the Grangemouth Colliery Company, for neglecting to keep at pit No. 5 a book, and to record therein the ventilation reports. The two seams in the pit—the Main coal and the Crow coal—were inspected every morning by the separate Inspectors. The Inspector of the Crow coal wrote out and signed a separate report as to the state of the workings, but as to the ventilation simply reported verbally to the other Inspector of the main seam, who inserted in his book a report referring to the whole pit, including the ventilation, and signed that report. Mr. Gair maintained, for the prosecution, that the report of the ventilation of the Crow coal seam should have been kept in a book by the person who inspected it, and that, as that person had not kept any such book, there had been a failure to comply with the provisions of the Act, as libelled. The Sheriff was of opinion that the Act had not been complied with fully owing to the failure of one of the Inspectors to sign the report, but as it was evident that there had been a regular inspection of the ventilation of both seams of the pit, and a report regularly recorded which was intended to apply to the whole pit, he must hold the complaint not proven, since the particular irregularity of one party failing to sign was not charged.

THE COST OF COLLIERY EXPLOSIONS.—A meeting of the Colliery Explosions Fund Committee was held at Wigan on Tuesday, to consider what steps should be taken, as the fund is now exhausted. The committee was appointed to collect subscriptions for the maintenance of the widows and children of the sufferers by the explosions in the Wigan coal field, which occurred from Nov. 1868, to Sept. 1871, and by which there were killed 317 persons, who left 150 widows and 354 children to be provided for. Over 16,000l. has been subscribed, and the whole of this amount has been expended in relief. It is estimated that a further sum of about 7500l. will be required to meet the calls on the fund. A sum of 1200l. which has been promised remains unpaid, and it was decided to call this in at once, it being expected that sufficient will be received immediately to continue the relief, and to call another meeting early next year.

TRADE MARKS.—One of the most important Acts of last Session in its bearings on commercial interests is the Trade Marks Registration Act, which comes into operation on Jan. 1, 1876, and which compels the registering of all existing and future trade marks (or the rights of their proprietors cannot be preserved against infringement), at a register office to be established in London. Mr. Goulden, offices for registration of trade marks, High Holborn, London, has forwarded us a synopsis of the Act, which it would be well for all interested to procure.

NATURAL GAS.—It appears that more natural gas has been "struck" in Pennsylvania, and that the firm of Messrs. Rogers and Burchfield, who are using gas instead of coal in the making of iron and tin plates at their works at Leechburg, about 40 miles above Pittsburg, will now be able to dispense with coal at their Apollo Works. They have brought the gas at Leechburg across the river from an old well which had been sunk for oil, but they will get gas at the Apollo Works from two wells which they have themselves bored. Messrs. Graff, Bennett, and Co. are bringing into Pittsburg at a cost of 30,000l. gas from a well some 30 miles away. It is not yet certain that the pressure of the gas will be sufficient to overcome the friction of so great a journey. Still, other ironmasters at Pittsburg, believing that it will be impossible for coal-using firms to compete with those who have gas, are watching with great concern the success or otherwise of Messrs. Graff, Bennett, and Co.'s efforts. American capitalists, seeing the revolution that the finding of gas is likely to bring about in the iron states of the United States, have secured all the gas wells at present known to exist in the district from which Messrs. Graff, Bennett, and Co. are getting their supply. If, therefore, that firm should be successful, and the ironmasters have to follow suit, much money is likely to be made by the capitalists who believe that they can foresee what will happen. It is stated that the quality of the coal is vastly improved by the use of gas and the application of blast upon the Rogers principle, and that it is now practicable to make "4in" plates in the States from ordinary pig iron. This Messrs. Rogers and Burchfield are doing, and they have made arrangements for largely increasing their output, which is selling freely. With the assistance of gas and blast, what Messrs. Rogers and Burchfield have done every American ironmaster, it is urged, can do.

MINING IN SPAIN.—Consul Phipps, in his report on the commerce of Spain, says that of 49 provinces of Spain 46 are mineral, and are, in the order of importance, Almeria, Murcia, Oviedo, Jaen, Granada, Huelva, Santander, Ciudad Real, Cordova, Teruel, Biscay, Badajoz, &c. The value of the exports of metals and mineral ore has increased from 280,643l. in 1853, to 3,231,761l. in 1873. At the close of 1871 there were 678 ironstone mines open and 637 mines of pit coal, while the production in that year reached 5,857,625 metric quintals of ironstone, and 5,897,076 metric quintals of coal.

GOLD IN VICTORIA.—The latest reports state that the yield of gold in Victoria is being kept up to the average of the last 12 months. Recently one of the Sandhurst companies—the Princess Alice—from a small spur in their claim had the most extraordinary crushing which has, perhaps, ever been known in the colony. From 6 cwt. of specimens taken from the spur they had the surprising yield of 1000 ozs. of gold, and as they obtained during the same week from other parts of their mine 725 ozs. of gold, their yield for that week was 1725 ozs., an amount which has, perhaps, never been equalled by any mine in the colony, with the exception of one or two occasions, when the Great Hustler's Tribute Company were obtaining their extraordinary yields about two years ago. The mines on Sandhurst generally are showing very well.

BRITISH MACHINERY FOR PERU.—Our esteemed correspondent, Mr. HENRY SEWELL, M.E., will leave England by the Royal Mail Steamer on Monday, and proceed, cheered up by the hearty "Glück auf!" of his many friends, via Panama to Peru, having undertaken the control as managing partner of an extensive and valuable mining property on the Andes and in that country. For many weeks past Mr. Sewell has been busily engaged in selecting and getting together the several portions of the plant and machinery with which the treatment of the ores is to be effected. Determined that nothing capable of adding to the efficiency of the works shall be wanting he (Mr. Sewell) has recently paid a special visit to Clausthal to see the latest improvements in the concentration of ores which have been introduced since his former visits there and in Hungary in the year 1865. From Mr. Sewell's long and valuable professional and practical experience, his opinion upon these matters is of considerable value. The readers of the *Mining Journal* may be congratulated upon his having promised to devote some of his leisure time whilst on shipboard to the writing of a full account of his Clausthal visit. As an evidence that Mr. Sewell intends to display the same vigour and energy which has been characteristic of him throughout his career, and which is so essential to mining prosperity, it will suffice to mention that amongst the machinery shipped from Aberystwyth via Magellan on Oct. 6 were two Blake's stonebreakers, manufactured by Marsden, of Leeds, and a large quantity of dressing and concentrating machinery, ordered of Mr. G. Green, of Aberystwyth, including two Cornish rolls or mills, two iron water-wheels, jiggling machinery, buddles, and indeed every requisite. As the whole of the machinery has to be carried a great distance on muleback, it was compulsory that the weight of the heaviest piece should be limited to 250 lbs., and this has been so judiciously done that the maximum efficiency of the machines has been completely maintained. Owing to the difference of time occupied by the journey via Panama and via Magellan he will arrive a month in advance of the machinery, so that the unloading as well as the shipment will be conducted under his own superintendence. We wish Mr. Sewell

every success in his new undertaking, and that it may be but the pioneer of many mining enterprises so successful as to lead to the enviable title of "Rich Peru" being once more brought into general use.

CAPT. W. HARRIS.—The friends of Capt. W. HARRIS, late manager of Wheal Lucy and West Wheal Lucy Mines, will be pleased to learn that he is appointed managing agent of Wheal Emma Tin and Copper Mine, in Devonshire.

CAPT. JOHN SPARGO.—It is with deep regret that we announce the death of another Cornish mining veteran, Capt. John Spargo, of Stokeclims land, Cornwall, who for upwards of 50 years devoted himself to the metalliferous veins of Cornwall and Devon—in fact, most, if not all, of the metal veins of the United Kingdom have been surveyed and privately reported on by this true and well-known practical miner, and many for whom he inspected derived considerable benefit by adhering to his honest and faithful reports. As a judge of mineral veins, partially developed in any part of the United Kingdom, more especially in Cornwall and Devon, his judgment has been considered unsurpassed—in fact, there is scarcely an instance but his opinion generally turned out to be correct. Through his long career his motto has been to do unto another as you would be done unto, and he has left a testimony behind that his end was peace. His descendants are now spread in different parts of the kingdom, continuing in the same branch of industry, and from present indications are likely to become of great benefit to legitimate speculators. We wish them every success.

COAL AND IRON IN THE UNITED STATES.—The anthracite coal trade presents no special feature. It has been agreed by all the parties to what is known locally as the coal combination to advance the prices of stone and egg coal 10 cents per ton this month; all other sizes of coal remain at previous prices. The stocks of coal on hand are now stated to be ahead of the market. The production of anthracite coal in Pennsylvania to Oct. 1 this year was 13,480,475 tons against 14,013,731 tons in the corresponding period of 1874 the bituminous coal production of the same State to Sept. 18 this year shows a small increase as compared with the corresponding production in the corresponding period of 1874. The iron furnaces of the West, South-West, and South of the United States, many of which can make iron at less cost than Eastern markets, and which have the freights to the Western market in their favour, are absorbing nearly all the Western heavy iron business, and it is thought that they will continue to do so when trade recovers. The Bessemer steel rail works in the United States can now produce, it is stated, 350,000 tons per annum. English iron rails are quoted in New York at \$48 to \$50 per ton gold. American iron rails are quoted at the works at \$46 to \$50 per ton currency.

REPORT FROM CORNWALL.

Oct. 14.—Mining matters have been moderately active recently, and would have been more so if it had not been for the apparently well-grounded expectation of another rise in the tin standard. The prices paid are again ruling above those officially quoted, which may be regarded as the minimum. From the mining districts generally the reports of actual operations are decidedly favourable, and several discoveries of interest and importance have recently been made. Thus the 120 west, at West Ston, is worth 8 tons of copper ore per fathom. The upper levels are also productive. There seems every probability for expecting a great course of ore in the western ground. Shares six months since were offered for sale at 10l. each. They have now touched 80l., and a still higher rise is expected. In like manner the discovery of copper ore in West Gorland Mine attracts attention. The shaft now yields 5 tons of rich ore per fathom, valued at 50l. The parties connected with this mine well deserve success, as they have pulled together and steadily throughout. Great credit is due to the local manager, Capt. Mayne, for his perseverance. There is likewise an improvement in Levant. The history of Carn Camborne is very instructive. It was sold a few months since by the company working it for the value of the engines and other materials. The mine has since been self-sustaining, and not a penny has been laid out by the present local proprietor, which consist of only three persons. A very good course of ore, averaging 7 tons per fathom, has been laid open for 12 fms. in length, and is still equally productive both east and west of shaft. The present sampling for two months will be from 110 to 120 tons, and also about 200l. worth of tin from the south or tin lode, leaving a good profit. The operations are being pressed on vigorously.

The new boring machine is now at work at Dolcoath. It has done some very remarkable things at surface, sinking 3 in. or so in the hardest rock in a minute, and should answer in actual working, since it is not only effective but simple, and unlikely to get out of order. The trial is being watched with great interest. It was put to work in the 314 fm. level. Compressed air is the motive agent. Surely with all that is being thought and done the boring problem will be solved ere long.

A very curious advertisement has appeared in the Plymouth papers. A notice of a public survey for the purpose of letting two work-bargains and tribute pitches at Bulkmore Mine, near Buckfastleigh. The object is evidently to attract miners, and the idea is decidedly a good one. It is apparently quite new.

The recent events at Great Wheal Lovell have, not unexpectedly, led to a prosecution. Capt. Prisk certainly in no way neglected his duty there, though some of the expedients adopted to improve the ventilation were not the best calculated to secure that end. Still there was no resisting the fact that ventilation of the mine was not what the Act required, and, therefore, Capt. Prisk was summoned by Dr. Foster before the county magistrates at Helston, in

"That he did not cause an adequate ventilation to be constantly produced in such mine to such an extent that the shafts, winzes, sumps, levels, and working places of such mine, and the travelling roads to and from such working places, were in a fit state for working and passing therein, from Aug. 23 to Aug. 31 last, contrary to rule 1, sec. 23, of 35 and 36 Vict., cap. 77." Mr. J. G. Chilcott, Truro, prosecuted. Mr. W. Tyacke, Helston, on behalf of Capt. Prisk, admitted the offence. Dr. Foster did not press for the full penalty. The Chairman, after a short consultation with the other magistrates, said they had carefully considered the circumstances of the case, which had already been made public to a great extent by a coroner's enquiry, which was necessarily held in the case of death. Of course, Capt. Prisk must have been that, as captain of the mine, the Metalliferous Mines Act was one that was considered necessary to be passed for the protection of miners, who risked their lives very often for the public good, and that it was undoubtedly the duty of every agent of a mine not only to acquaint himself with the work east upon him, but so far as in him lay, to endeavour to perform it completely. They felt that this was, perhaps, rather an error of judgment than anything done intentionally or negligently on his part, and hoped it was the case, as had been stated on his behalf, that he was acting intelligently in the matter, and with every desire to obey the injunctions of the Act to carry on the mine in a proper manner. Unfortunately, as had been admitted, the ventilation was not quite so perfect as was required by the Act, but as it was the first offence that had occurred in the district, and as Dr. Foster did not seek for the full penalty, they should impose a fine of 10l. and the costs.

A valuable contribution to a department of geological science which has been for many years much neglected has been made by Mr. J. Arthur Phillips, and published in the *Quarterly Journal of the Geological Society*, "On the Rocks of the Mining Districts of Cornwall, and their Relation to Metalliferous Deposits," combining with a careful microscopic examination of the rocks and veins, a most searching chemical analysis. His general conclusion, drawn from his observations and experiments, is that the metallic minerals found in the lodes of Cornwall result from deposits by chemical action from waters and aqueous vapours circulating through the rock fissures. We trust this investigation may be industriously continued.

The differences existing between Wheals Kitty (Lelant), Margaret, and Mary have at length been settled, and the three concerns are now amalgamated. The history of the manner in which this amalgamation was brought about, as given in the *Western Morning News*, is peculiarly interesting, and in view of the disputes with regard to similar points which frequently arise in other districts, instructive. When Wheal Kitty and Wheal Margaret were abandoned by their former adventurers, Bolitho and Messrs. Harvey set them to work, and in the face of heavy losses, have continued to work them, to the great benefit of the neighbourhood. It was seen at an early period that these mines, with Wheal Mary, being all connected in the underground workings, ought to be amalgamated, and proposals were accordingly made to Wheal Mary adventurers. They would not accede, but, on the other hand, sought to get Wheals Kitty and Margaret to pay part of Wheal Mary's water charge. These mines declined, as they were pumping more than their share of the work. Wheal Mary adventurers, however, some months since persuaded themselves that they were pumping the main part of the water from the adjoining mines, and stopped their pumping engine, naturally, from their point of view, thinking to drown Margaret and Wheal Kitty into compliance. It was found that these mines could keep the water during the summer without the aid of Wheal Mary's pumping engine, but the adventurers therein, however, urged on Mary's adventurers to put their engine to work and amalgamate the three, so as to save them to the neighbourhood. This was for several months persistently refused, and at length Wheal Margaret and Wheal Kitty adventurers found that with their utmost endeavours they could not hope to keep the water down during the coming winter, and the lodes, after appealing to Wheal Mary's adventurers to put their engine to work, as a last resort—to compel them to terms—gave permission to Wheal Margaret to stop pumping. This Wheal Margaret did, and when Wheal Mary found the water steadily rising they consented to work their engine

and to amalgamate the concerns, adding also a piece of ground belonging to Trencrom sett, to be worked jointly between the amalgamated mines and Trencrom. No blame should, perhaps, be attached to either party, but it will be admitted, seeing the result, that Wheals Margaret and Kitty adventurers from the amalgamation took the correct view of the position of the mines. It is to be regretted, too, that their advice was not followed at an early period, for it would have saved a large amount of money. The neighbourhood and the lodes are to be congratulated on an arrangement which is of the greatest importance for Lelant parish and vicinity. This water question has always been one of great difficulty in Cornwall, and has led to the stopping of many promising sets. There is generally a good deal of strong feeling imported into such questions, and the lodes should wherever they can use their influence to bring about an amicable arrangement equitable to all parties.

Capt. John Maynard, the manager of East Pool Mine, has established a mining class for the purpose of teaching mine surveying, which will, no doubt, be found of great service by young miners who are expecting in future to become mine agents, several of whom have joined the class. They will probably acquire more practical information in the six lessons Capt. Maynard intends giving than in twelve months mere lesson-learning from books.

Major Ross last week gave a capital lecture on "Pyrology, or the Practical and Theoretical Use of the Blow-pipe," at the Royal Institution of Cornwall. Major Ross gave a short history of the blow-pipe, and then proceeded to describe some of his new methods of testing by means of boric and phosphoric acids instead of borax and microcosmic salt, and many other novel processes of analysis. He also exhibited his aluminium plates, which are intended to replace the old charcoal supports, and which prove most excellent in catching sublimate of various kinds and colours. His "pyrological" can has may safely be recommended to all travelling mineralogists. Major Ross said that no persons, until they had actually tried it, could appreciate the beauty and value of the blow-pipe analysis, and concluded by recommending ladies to take up the study. A class has been formed in Truro for receiving a few practical lessons on blow-pipe analysis from Major Ross during his stay in Cornwall. A vote of thanks to Major Ross, proposed by Mr. Ketto, and seconded by Mr. J. H. Collins, was carried unanimously.

REPORT FROM NORTH AND SOUTH STAFFORDSHIRE.

Oct. 14.—The principal Quarterly Meeting of the South Staffordshire Coal and Iron Trades was held in the Birmingham Town Hall, and was largely attended by local ironmasters as well as by merchants from all parts of the kingdom. So far as prices are concerned the meeting was altogether featureless, no change whatever being announced either in coal or iron. The rates for coal, therefore, remain on the basis of 11s. per ton for Earl Dudley's furnace quality, and iron is on the basis of 4l. 15s. for best native all-mine hot-pig, and 10l. to 10l. 12s. 6d. for marked bars. A considerable number of orders changed hands to-day, but they were mostly for small lots to meet present requirements. Sheets were largely enquired for, being the only description of iron for which the demand can be said to be anything like buoyant. Hematite pigs sold at about 1s. 3d. per ton more than last week, and the general tendency of prices for the commoner makes, both of pigs and finished iron, though without actual change, was a degree firmer.

Among the exhibits in the Town Hall to-day none attracted more attention than that of the Diamond Rock Boring Company, who showed a classified arrangement of specimens of the various strata passed through in the trial boring of 200 yards in depth on the estate of the Cannock and Huntington Colliery Company. The clearness of the cut, whether a hard or soft substance, even at the great depth indicated, is truly remarkable. One of the diamond-drills was exhibited—the rough diamond of which cost only 50 guineas, and had drilled 200 yards with comparatively little wear.

At a special meeting of the Cannock and Huntington Colliery Company (Limited), held at Walsall on Monday, the engineers (Messrs. W. North and Son) reported that the Diamond Rock Boring Company had completed their contract, and it was decided that the boring should be carried to a further depth, without, however, delaying the arrangements for the commencement of the sinking of the shafts.

The following were among to-day's quotations on the Birmingham Stock Exchange:—Sandwell Park Colliery, 34; Cannock and Huntington Colliery, 5 prem.; Pelsall Coal and Iron, 4½ dis.; Patent Shaft and Axle, 4½ prem.; Chillington Iron, 5; John Bagnall and Sons, 6; Cannock and Leecroft Colliery, 95, buyers; and Patet Nut and Bolt, 7½ prem.

Under the name of Bloomer and Co. (Limited) a joint-stock company is in process of formation for the purpose of acquiring and carrying on the chain and anchor works of Mr. Caleb Bloomer, at Gold's Hill, West Bromwich. The business has been established 25 years, and is in a very good situation for the trade, not only as regards coal supply, but also from being near to most of the best makers of chain and cable iron. The capital of the company has been fixed at 30,000l., in 10l. shares, but of this amount it is only proposed for the present to call up 25,000l., of which amount a large proportion will be raised on preference shares, bearing interest at the rate of 6 per cent. Mr. J. Bannerman Cumming, the well-known East India merchant, of London, is Chairman of the directors.

The North Staffordshire Iron Trade is far from buoyant, but there is, on the whole, a degree more steadiness in quotations. The shipping orders have been unusually light during the past season. The make of pig-iron is considerably under the average, but the whole of the yield is being taken into consumption. The Coal Trade is quiet, and many of the collieries are only in partial operation.

Messrs. Peter Wright and Sons, of Dudley, announce an advance of 4d. per pound in the price of vices and anvils, to cover recent wages concessions.

Messrs. John Bagnall and Sons (Limited) are, we understand, about to put down another new colliery plant on their Bentley estate, near Walsall.

CANNOCK AND HUNTINGTON COLLIERY COMPANY.—A meeting of the directors of this company was held, on Monday, at the offices, Walsall, Mr. C. A. C. presiding. The engineer reported that the Diamond Rock Drill Company had carried the boring to a depth of 600 ft., and thus completed their contract, and it was determined to carry the boring a little deeper still, upon the understanding that the continuation of the boring would not in any way interfere with or retard the preparations for the sinking of the shaft and the development of the colliery. It was further announced that although no seam of coal had been passed through since the 8-ft. seam was proved, the boring had continued in coal measures, which the engineers were able to identify as those of the Cannock Chase coalfield. No decision was come to with reference to the proposed adoption of Messrs. Chaudron's novel method of sinking the shaft through the water-bearing strata.

REPORT FROM MONMOUTHSHIRE AND SOUTH WALES.

Oct. 14.—The quarterly meetings have now commenced, and some anxiety is evinced to learn as early as possible what transpires, and what is likely to be the position of the trade during the last quarter of the year, but so far it does not seem likely that there will be any material change in things after the meetings are over. The year began dull, and there is little doubt it will end as bad. At the rail works of the district there is rather less doing at present than was done a month ago. There is a very poor demand for iron for exportation, and the clearances are decreasing. Last month the total quantity of iron exported was 18,758 tons, that being made up of 9953 tons from Cardiff, 8589 tons from Newport, and 206 tons from Swansea. In August there were 23,672 tons cleared, and that quantity was scarcely more than the usual average. There is not a great deal doing on home account; in fact, there are not half enough orders coming to hand to keep the great works of the district in anything approaching full employ, and consequently there are many of the finest mills, forges, and workers completely idle, and will probably continue so for some time. Notices are being issued in some quarters of a termination of contracts, and there is reason for believing that a general reduction in the wages rate will follow. Under present circumstances this is not surprising, but rather to be expected by the men themselves. An application made in the Bankruptcy Court to register the resolution come to by the creditors of Messrs. Pothergill and Hankey, proprietors of the Aberdare and Plymouth Ironworks, was granted by Mr. Registrar Brougham. The liabilities are stated at upwards of a million and a quarter sterling. The total unsecured liabilities amount to 898,687l., against assets 103,851l. There are fully-secured creditors to the extent of 317,180l. Steps are being taken to re-start the Aberystwyth Iron-

works. The tin-plate trade is still in just the same depressed state. The redeeming staple of the district undoubtedly is the Coal Trade. It is very fortunate that there is a good business doing, and that employment can be found for so many hands that would otherwise be idle. It is a drawback to masters, however, that prices are so low. The exports last month show an increase on the preceding month, as well as in the corresponding month of last year. They were as annexed:—Cardiff, 322,963 tons, against 245,823 tons in August, 1874; Newport, 37,438 tons, against 34,145 tons; Swansea, 52,049 tons, against 48,835 tons; and Llanelly, 5608 tons, against 8852 tons. The shipments coastwise also show an appreciable increase. They were as follows:—Cardiff, 71,593 tons, against 68,539 tons in September last year; Newport, 62,450 tons, against 56,425 tons; Swansea, 22,620 tons, against 26,802 tons; and Llanelly, 9022 tons, against 9120 tons. Swansea exported 18,001 tons patent fuel; and Cardiff, 7830 tons. The cold weather which has now set in will, no doubt, give considerable impetus to the demand for house coals. It is understood that the South Wales Colliery Company are about to stop their Black Vein Pit at Risca. It is now daily expected that the seam will be struck in the Newport Abercarn Company's new pit at Abercarn.

An important announcement has been made by the Coalmasters' Association. Mr. Dalziel, their secretary, in a communication to shipbrokers and shipowners, referring to the meaning given in law courts to the word "strike," as used in charter parties, says:—"Hitherto a strike has been understood to mean a stoppage of the collieries, brought about by any dispute between employers and workmen; but, as it is now necessary to define what is intended, several meetings of the trade have taken place, and it has been unanimously agreed to adopt the subjoined loading clause, which will appear in all future charter parties." The clause referred to provides that in all lay days the following shall be accepted:—"Sundays, Custom House holidays, days on which there shall be any hindrance in getting coal from the colliery to the tip, or to the ship, and days on which there shall be any interruption of colliery work at any of the collieries whence the coal should come, whether such hindrance or interruption shall arise from floods, frosts, or other acts of God, or from accident or breakdown, or cessation of work in consequence of strike, lock-out, dispute with or dismissal of workmen, either at the collieries or port of shipment, or other cause of similar or different nature."

Mr. Macdonald, M.P., has requested the men to allow him to retire from the Conciliation Board, and the men are being canvassed for their answers to the question, "Shall Mr. Macdonald retire or not?"

Something like a practical scheme has at last been propounded by Mr. Criswick, of Swansea, for placing that port on the main line of the Great Western Railway. It is proposed to cross the entrance to Briton Ferry Dock, and also the Neath River, so that the present detour via Neath will be avoided. After reaching the Swansea side of the river the Vale of Neath line will be run over for a considerable distance, and then the river Tawe will be crossed about 200 yards from the North Dock, and thence along the Carmarthen road to rejoin the Great Western near the 215½-mile mark. The cost is estimated at 170,000£; but if the work can be done for 200,000£, the return will well repay the expenditure. The distance to London will be reduced 5½ miles, and to Milford 1½ mile. The gradients will also be favourable. The principal disadvantages are that Neath will cease to be on the main line of the Great Western, the entrance to the Briton Ferry Dock will have to be crossed over, and the Neath River will have to be bridged. Whether the great advantages claimed more than counterbalance these drawbacks those interested in the district are best able to judge.

Mr. John Naysmith, the colliery manager of Ynyscedwin, having entered into an engagement as estate and colliery manager to an Anglo-Indian company at Ranegung, the occasion was taken advantage of by the workmen in his employ and his friends to show him their regard and esteem. The presentation took the form of an address, magnificently engrossed on vellum, and handsomely framed, a valuable pocket aneroid barometer, and a purse containing upwards of 80£ in money.

Mr. John Rosser, of Treherbert, has been presented with a beautifully illuminated and framed address by the workmen of the Rhondda Merthyr Colliery, and a valuable timepiece, as well as a pair of elegant vases, by the members of the Bethany Chapel. Mr. Rosser has been the accountant at the Rhondda Merthyr Colliery for many years, but a short time ago he resigned, to undertake a similar position at the Ynyscedwin Colliery, Tondur. The meeting was presided over by Mr. John Jones, Rhondda Merthyr Colliery.

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week business has continued very quiet. In shares of iron and coal concerns the favourable movements are 5-10ths on Benhar (all paid), and 3-10ths on Benhar (5½ paid) and Cairnbarrow. Bolckow, Vaughan A has declined 1; Lochore and Caplethead 3-10ths; Ebbw Vale, Glasgow Port Washington (all paid), and Shotts Iron (5½ paid), each ½; and Marbella, Monkland, and ditto guaranteed 7 per cent. preference each 1s. Chapel House 4 to 4½; North Lonsdale Iron, 5 dis., sellers; Oak Pits Colliery, 4½ to 5; and United Bituminous Collieries, ½ to ¾. In shares of copper concerns prices are better, with the exception of Huntington, which are 4s. lower, at 1½, sellers. The prices in home ventures are:—Bedford United, ¾, buyers. Dolcoath, 47 to 47½. East Caradon, 34s., buyers. East Wheel Grenville, 28s., buyers. Dolcoath, 47 to 47½. Great Laxey, 16 to 16½. Glasgow Caradon a point higher, at 28s.; ditto new shares, 18s. Gunnislake (Clitters), 2½, sellers. Killbreth have fallen, at ¾ to ¾. Marke Valley, 65s., sellers. New Penbroke, ¾, sellers. Tincroft, 26 to 26½. West Basset, 6 15ths, sellers. West Maria and Fortescue, ¾, sellers. West Frances, 9½ to 9¾. Wheel Kitty (St. Agnes) 10½, and Wheel Unity Wood, 1 to 1½. American mines continue out of favour. Emma have declined 3s. per share, and Richmond ½. Colorado Terrible Lode, after a temporary improvement, at 2½ to 2¾, are again 2 15ths, sellers. Australian Mines Investment is ¼ to ½; Flagstaff, 1 to 1½; and Riea, 3s. to 4s. In oil shares, Young's Paraffin 5½ lower, others unaltered. In miscellaneous prices tend upwards. Scottish Wagon (all paid), done at 10½, closing 9½ to 11; new shares, 8s. to 8½. On FRIDAY the business done was again moderate. Benhar, 10½ to 10¾; new shares, 5½ to 5¾. Bolckow, Vaughan A, done at 50, closing 50 to 51. Canadian Copper Pyrites, 34s. to 35s. Emma, 27s. to 29s. Flagstaff, 1 to 1½. Glasgow Caradon, done at 27s. 6d., closing 27s. 6d. to 28s.; new shares, done at 18s. Gunnislake (Clitters), 45s. 6d., sellers. Glasgow Port Washington, 3½ to 3¾. Huntington, done at 32s., closing 32s. to 33s. Killbreth, 23s., sellers. Omoa and Cleland, done at 51s., closing 50s. to 52s. Richmond, flat, done at 9½, closing 9½ to 9¾. Tharsis, 20½ to 21; new shares, 14 to 14½. West Basset, 6½, sellers. Young's Paraffin, done at 5½, closing 5½ to 5¾. Scottish Wagon (all paid), done at 11, closing 10½ to 11; new shares, done at 8s. 6d.

On SATURDAY (being contango day) the market was dull. Benhar (all paid), 10½ to 10¾; new shares, done at 10s. Glasgow Caradon, done at 1½; the next sale of ore by this company will be on the 21st inst., and is computed 245 tons. Last month's sale was 260 tons, while the corresponding sales in 1874 and 1875 were 245 and 308 tons respectively. Killbreth, 1½, sellers. Langdale's Chemical, 5½, buyers. Marke Valley, 3 15ths, sellers. Monkland, 7 per cent. guaranteed preference, done at 12s. Omoa and Cleland, done at 50s., closing 49s. to 51s. Richmond, done at 9½ and 9¾, closing 9 to 9¾. Shotts, new, 8½ to 8¾. Tharsis, done at 20½, closing 20½ to 21. Wheel Kitty (St. Agnes), 3 15ths, sellers. Scottish Wagon (all paid), 10½ to 11. The following were the rates of continuation current to-day:—Contango: 2d. on Canadian Copper Pyrites; 1d. on Glasgow Caradon; 2d. on Glasgow Port Washington; 2d. on Huntington; 6d. on Marbella; 2d. on Monkland (ordinary); 3d., 4d., 5d. on Omoa and Cleland; 1s. on Tharsis (new); and 6d. on Rio Tinto. Even: Emma, Backwardations: 9d., 1s. on Richmond; 2s. 6d. on Shotts; and 6d. on Tharsis. The making-up prices show the principal fluctuations. During the account now ended have been falls of 5s. 6d. and 12s. 6d. on Huntington and Richmond, and improvements of ¼ and ¾ on Omoa and Cleland and Tharsis (all paid).

On MONDAY the market was again dull. The new account opened for settlement on the 20th inst. Tuesday, Oct. 26, will be contango day. Benhar (all paid) shares done at 10½, closing 10½ to 10¾; new shares, 5½ to 5¾. Bedford United, 17s., buyers. Canadian Copper Pyrites shares done at 34s., closing 33s. to 35s.; at a meeting of shareholders, to-day, it was unanimously agreed to accept the provisional offer to purchase the whole estate and assets of this company. It was also agreed to go into voluntary liquidation, and a liquidator appointed. The Chairman referred shortly to the disadvantages of the suggestions made at the last meeting to avoid this change in the constitution of the company, as also to the advantages that might accrue from it. He mentioned that out of 38,500 shares, proxies had been received from 31,503 supporting it, so that there seemed to be an overwhelming preponderance. Nothing else of any interest transpired. Colorado Terrible Lode Armer, at 52s., sellers. Glasgow Caradon, 27s. 6d. to 28s. 6d.; new shares done at 18s. Glasgow Port Washington done at 36s. and 37s. Gunnislake (Clitters), 2½ to 2¾. Huntington done at 31s. and 30s., closing 29s. to 30s. Javali, ¾ to ¾. Killbreth, 21s., sellers. Richmond shares opened at 9 and 8½, but improved to 9½

and 9½, closing at those prices. Shotts (new), 8½ to 8¾. Tharsis shares done at 20½ and 21, closing 20½ to 20¾; new shares done at 14. West Maria and Fortescue, 5s. 6d., sellers. Young's Paraffin shares done at 5½, closing 5½ to 5¾. Scottish Wagon (all paid) shares done at 11.

On TUESDAY the market was quiet, but firm. Bolckow, Vaughan A, 49½ to 50½. Cairnbarrow shares done at 10 9-10ths. Cape Copper, 34 to 35. Colorado Terrible Lode shares weaker, at 2½, sellers. Dolcoath, 47 to 47½. East Wheel Grenville, 28s. 6d., sellers; Emma, 26s. to 28s. Glasgow Caradon shares done at 28s. Huntington shares done at 28s. and 30s. Killbreth shares again lower, at ¾ to ¾. Langdale's Chemical, 5½, buyers. Lochore and Caplethead shares done at ¾. Marke Valley, 3½ to 3¾. North Lonsdale Iron and Steel shares (70½ paid) offered at 5 dis. Omoa and Cleland shares done at 2½, closing about that price. Richmond shares done at 9½, closing 9½ to 9¾. Tharsis shares done at 20½ and 20 15-16ths, closing 20½ to 21. Tincroft, 26 to 26½; West Basset, 6 15ths, sellers; West Maria, 5s. 6d., sellers; West Frances, 9½ to 9¾; Young's Paraffin, 5½ to 5¾. On WEDNESDAY the transactions were very limited. Bedford United, ¾, buyers. Benhar (new shares) done at 5½, closing 5½ to 5¾. Canadian Copper Pyrites opened at 35s. and advanced to 36s. 6d., but were afterwards done at 34s. 6d. and 35s., closing 35s. to 35s. 6d. Colorado Terrible Lode, 2 to 2½. East Caradon, 31s., buyers. Emma flat, done at 22s., closing 20s. to 22s. Gunnislake (Clitters), 2½, sellers. Huntington, 1½, sellers. Killbreth, ¾ to ¾. Marke Valley, 65s., sellers. Marbella, 77s. 6d. to 79s. Omoa and Cleland, 51s. to 53s. Richmonds opened at 9½, but declined to 9½, closing 9½ to 9¾. This week's run is announced from the mine by cablegram at 240,000. The message adding: "Furnaces working well, drifting from winze, stoppage looking well." Shotts (new), lower at 8 to 8½. Tharsis, 20½ to 20¾; new shares done at 13 15-16ths, closing 13 15-16ths to 14. West Maria, 5s. 6d., sellers; West Maria, 5s. 6d., sellers. Scottish Wagon (new shares), 8s. to 8s.

The following are this week's prices of some stocks, shares, &c., occasionally dealt in on this market, but not quoted (with few exceptions) on any of the Scotch Stock Exchanges:—Iron, Steel, and Coal Companies: Andrew Knowles and Sons, 22½ to 22¾; Bolckow, Vaughan, and Co., "B," 44½ to 45; Britannia Ironworks, 10; Cardiff and Swansea Steam Coal, 3 to 3½; Chapel House Colliery, 3½ to 4½; Great Western Colliery, 11 to 12; Lehigh and Wilkes Barre 6 per cent. first mortgage, guaranteed by Central Railroad of New Jersey (U.S.), 89½ to 90½; Llynvi, Tondur, and Omoa Coal and Iron, 25½ to 27½; Mersey Steel and Iron, 4½ to 5½; Myndy Iron Ore, 2; Newport Abercarn Colliery, 3½ to 4; New Sharlston Collieries, preferred, 3 to 4; Powell's Llantwit Colliery, 1 to 2; Scottish Australian Mining, new shares, 5-10ths; South Cleveland Ironworks, 2½ to 3; Ulverston Mining, 10½ to 11; United Bituminous Collieries, ¼ to ¾; West Cumberland Iron and Steel, ¾ to 9½; Coppen, Lead, Tin, &c., Companies: Bedford United, ¾ to 1; Benberg Lead, ¾ to 1; Bowden Hill Manganese, ¾; Copiapo Mining, ¾; Court Grange Lead, ¾; Drake Walls, 2 to 2½; East Caradon, 1½; Elgar, ¾ to 1; Great Laxey, 16 to 18½; Great West Van, ¾ to 1; Gunnislake (Clitters), 2½; Lady Constance Lead, ¾ to 1; Marke Valley, ¾ to ¾; New Consols, 1 to 1½; New Penbroke, ¾ to ¾; New Quebrada, ¾; North Hendre Lead, 3 to 4; Prince of Wales, 4s. to 5s.; Plynlimmon Lead, ¾ to ¾; Rio Tinto, 7; Snowbrook, 4½ to 5; South Roskear, 4½ to 5½; West Esgrail Lie, ¾ to 1; West Maria and Fortescue, ¾ to ¾; West Poldice, 19 to 20; Wheel Mary Hutchings, ¾; Yorke Peninsula Mining 15 per cent. guaranteed preference, ¾; Yorkshire Lead, ¾ to 1; Gold and Silver Companies: Allandale, 1 to 1½; Australasian Mines Investment, ¾ to ¾; Battle Mountain, 1 to 1½; Chontales Consolidated, ¾ to ¾; ditto new shares, ¾; Colorado Terrible Lode, 2½; Don Pedro North del Rey, ¾; Eberhardt and Aurora, 8; Exchequer, ¾; Frontino and Bolivia, 1 to 1½; I.X.L., 3; Javali, ¾ to ¾; Pestarena United, ½ to ¾; Port Phillip and Colonial, ¾ to 1; Riea, 3s. to 3s.; Santa Barbara (late Par), 12s. to 17s.; South Aurora, 7-10ths; Tecoma, ¾; United Mexican, 2½; Welsh, "The," Gold, ¾; Winter's Freehold, 2 to 5.—Oil Companies: Filantshire Oil and Cannel, 1 to 1½; Midlothian, ¾; West Calder, 1 to 1½.—Miscellaneous Companies: Aberdeen Lime, 7 to 8; Bede Metal and Chemical, 3½ dis.; Congor Slate and Stone, 9½ to 10½; General Sewage and Manure, 4½ to 5½; Langdale's Chemical Manure, 5½ to 6; Lawe's Chemical, 6½ to 7; Nativo Guano, 2½; Newcastle Chemical, 13½ dis.; North Cornwall Kaolin, ¾ to 1; Phospho-Guano A, 7; ditto B, 2; Thames Chemical, 5; and subjoined are the latest prices, &c., of those quoted on the Stock Exchanges:—

Per share.	Paid up.	Previous.	Rate per cent. per annum.	Description of shares.	Last price.
£10	26	£12½	£10	Arncliffe Coal (Limited)	7
10	10	14	10	Benhar Coal (Limited)	15½
10	10	14	10	Bolckow, Vaughan, and Co. (Lim.)	50
10	10	15	10	Cairnbarrow Coal (Limited)	10 9-10
10	10	10	10	Chillingham Iron (Limited)	15½
32	29	7	7	Ebbw Vale Steel, Iron, and Coal (Lim.) ..	4
10	4	nil	nil	Fife Coal (Limited)	3½
10	10	10	10	Glasgow Port Washington Iron and Coal (L)	3½
10	10	10	10	Ditto Prepaid	3½
10	10	10	10	Lochore and Caplethead (Limited)	6½
10	10	58 7d.	5	Marbella Iron Ore (Limited)	79s.
10	10	10	10	Monkland Coal and Iron (Limited)	32s.
10	10	10	10	Ditto Guaranteed Preference	124s.
100	100	nil	nil	Nant-y-Glo and Blaenau Ironworks pref. (L)	37
10	4	13	13	Omoa and Cleland Iron and Coal (Lim.) ..	51s.
1	1	15	12½	Scottish Australian Mining (Limited) ..	1½
50	50	10	5	Shotts Iron	67½
10	8	10	5	Ditto New, issued at 2½ prem.	8½
COPPER, SULPHUR, TIN.					
10	7	—	—	Canadian Copper Pyrites (Limited)	35s. 6d.
10	10	—	—	Ditto All paid	61s.
10	7	20s.	20s.	Cape Copper (Limited)	24½
3	2	—	—	Dunsley Wheel Phoenix Tin (Limited) ..	2s.
1	1	12½	12½	Glasgow Caradon Copper Mining (Lim.) ..	28s.
1	15s.	12½	12½	Ditto New	18s.
10	9	—	5	Huntingdon Copper and Sulphur (Lim.) ..	1½
25s.	23s.	—	—	Kapuni Mining (Limited)	1½
10	10	—	—	Panulidlo Copper (Limited)	4
10	10	—	—	Russian Copper (Limited)	2½
10	10	25	25	Tharsis Copper and Sulphur (Limited) ..	20½
10	7	25	25	Ditto New	4
1	1	—	—	Yorke Peninsula Mining (Limited)	¾
GOLD, SILVER.					
20	20	—	—	Emma Silver Mining (Limited)	22s.
10	10	—	—	Flagstaff Silver Mining (Limited)	1½
5	5	—	—	Last Chance Silver Mining (Limited) ..	1
5	5	—	35	Richmond Mining (Limited)	9½
OIL.					
10	7	2½	5	Dalmeny Oil (Limited)	5½
10	10	—	—	Uphall Mineral Oil (Limited)	3
10	8½	5	5	Young's Paraffin Light & Mineral Oil (L)	5½
MISCELLANEOUS.					
50	25	16	16	London and Glasgow Engineering & Iron Shipbuilding (Limited)	22
20	11½	—	—	Peruvian Nitrate (Limited)	11½
10	10	8	5	Scottish Wagon (Limited)	10½
10	4	—	5	Ditto New	8s. 6d.

† Interim. ‡ Per share.

Last day for this account Oct. 25; settling day, Oct. 29.

J. GRANT MACLEAN, Stock and Share Broker.

NOTE.—The above list of mines and auxiliary associations is as full as can be ascertained, Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them and such information as can be ascertained from time to time to be inserted in this list, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

Post Office Buildings, Stirling, Oct. 14.

Mr. R. L. Ross, of Shipcote Colliery, Gateshead, satisfactorily passed the examination held before the Board of Examiners appointed under the Coal Mines Regulation Act of 1872, at Darlington, on July 26 last, and has been awarded certificate of competency as a manager of mines.

COAL WASHING MACHINERY.—According to the invention of Mr. M. EVARD, there is fitted into the upper surface of a large cylinder a steam pipe, which conveys steam, at a pressure of about 10 lbs. per square inch, to the surface of the contained water, for the purpose of depressing the latter, and thereby raising it in the smaller cylinder. The perforated piston which carries the load of coal is supported by a rod, fitted at its lower end with a small piston working in a hydraulic cylinder under pressure; this cylinder occupies the lower central portion of the smaller plate-iron cylinder, and is fixed to bearers fastened to the larger cylinder. The upper portion, a length of about 3 ft., of the cylinder which carries the charge of coal, is made separate from, and capable of moving over, the lower portion upon horizontal guides fixed to the building in which the machine is contained, and along these guides it is pulled backwards and forwards by small pistons working in hydraulic cylinders. In operating the machine steam is first turned into the large cylinder, and the water therein depressed and forced upwards in the smaller cylinder to near the height of the joint between its lower fixed and its upper movable portion. While the water is maintained at this height the charge of coal is tipped into it from a small wagon. It descends on to the perforated piston, which is at its lowest position, the stones and larger pieces of coal reaching it first, and the charge thus becoming partly sorted. Steam is now turned off, and that left in the cylinder is condensed, forming a partial vacuum, which causes the water to pass from the smaller cylinder through the coal, and refill the large cylinder. Intermitting ascending and descending currents are thus directed through the charge of coal, by turning the steam on or off as many times as may be necessary to clean and classify it. After the steam is turned off for the last time the mass is allowed to stand for a period of from two to five minutes. By means of the hydraulic pressure cylinder the entire mass is then raised sufficiently to allow of the upper layer of fine material and dirt to be directed into a trough, by the horizontal movement of the upper portion of the cylinder. After the first operation the movable portion of the cylinder is returned, and the charge raised sufficiently to admit of the removal of another layer, or the whole by the return movement of the cylinder. The trough through which the coal passes into small wagons is fitted with a grating to allow the water to drain from the coal into a receiver, by which it is conducted into a large settling tank, where it is cleared of mud and stones, and afterwards again used in the cleaning cylinder.

METALLIC NECKTIES.—A rather novel application of metal has been proposed by Mr. J. E. O. Koch, of South Frith, Tunbridge. In the specifications of his patent he describes the manufacture of imitation ties from a solid

material, such as vulcanite, metal, &c., with a shank at the back, the rear end of the shank carrying a plate like that on a collar stud. An economical tie is thus obtained, together with a device for attaching it to the shirt.

NICHOLASS'S PATENT WATER AND LIQUID INDICATOR.

This indicator is independent of distance or level, and is without valves or other mechanism to get out of order. It may be put in any convenient place, as an office, hall, kitchen, or yard, as it is entirely independent of the position of the boiler, tank, or reservoir to which it is attached, continually showing the depth of water or other liquid contained in such boiler, tank, or reservoir. For steam users this invention is invaluable, as by its use the manager has a check upon the boiler tender, without going to the engine-house; combined with the indicator is a genuine Bourdon pressure-gauge, indicating the pressure and water line; at the same time the stoker, knowing such a check is upon him, will be more careful than usual. We often see cases where previous experience has no effect in preventing accidents to steam generators. As an illustration, we have only to go back to the fatal Economiser explosion at the India-rubber Works, Ardwick; in this case we shall find that a careful man who had over 30 years experience was not a sure protection from accident. This gauge will be a valuable acquisition where Economisers are used. Economisers should always be full of water, but it is very doubtful if such is the case, as under certain conditions the water must sink in the tubes from loss by evaporation. If (say during the dinner hour) the pumps cease to inject into the economiser, and the heat from the fires continue, then steam will be generated, and as soon as it attains a sufficient tension will be forced into the boiler, and in a short time the water will become low in the pipes, through evaporation. The top ends of the tubes being unprotected by water will become superheated, and be a ready means of explosion or fracture upon the pumps being started. As most economisers are now fixed the stoker has no means of knowing when the water is low, and therefore has to work by the "rule of thumb." Ordinary water gauges have been tried and abandoned; being fixed in some inconvenient place it was looked at in due proportion to its accessibility; this gauge can be attached to an Economiser, and placed in the stoke-hole or engine-house, and the stoker would then see without extra trouble the position of the water, and work accordingly. If placed in the office under the eye of the manager the pressure-gauge is also attached and supplied with a maximum pressure-finger, he will then see in the morning if the Economiser has, during the night attained a dangerous pressure; if it has passed the proper pressure then there must be something wrong, and the safety-valve should be seen to at once. In the case of forge or vertical boilers the water-gauge is situated above the roof of the building, and the attendant has to climb up and down continually to inspect the water-gauge, which process is not only laborious but wasteful of time. The office water-gauge may be applied to this case, and placed on the same level as the attendant, or on the ground-floor, level with the forge, thus saving the trouble of climbing up to the ordinary water-gauge, and it would also call the attention of the attendant more frequently to his water-line. It is also applicable to marine boilers, as it may be placed in the chief engineer's cabin, so that he may see what the boilers are doing without leaving his berth. The rolling of the vessel does not affect the working of the apparatus.

This office water-gauge is an exceedingly useful instrument to indicate the height of water in tanks, wells, &c., and is applicable to any vessel holding liquid, or semi-liquid, as tar, molasses, &c., and will indicate in the office the quantity of the liquid in the tank to which it is attached. For ordinary tanks upon the roofs of dwelling-houses, or the hot-water tanks attached to the kitchen boilers, it is a very useful adjunct, and may be placed in the hall or kitchen, and always show the quantity or height of the water. There is no circulation of water in the pipes, therefore no sediment can accumulate.

CENTRIFUGAL PUMPING-ENGINES.—The Jurors of the International Exhibition, at Cologne, which was recently closed, have awarded a special gold medal to Messrs. John and Henry Gwynne, of the Hammersmith Ironworks, London, for their direct-acting centrifugal pumping-engine; this engine was shown at work, and was an object of considerable attraction in the Exhibition owing to the exceedingly large volume of water it raised; it is of the same class as that made by this firm for the reclamation of the Ferrara marshes, and which constitute the largest set of pumping machinery in the world. Messrs. Gwynne have recently completed a similar set of engines for the reclamation of the Legner lake in Holland, where they are now being erected.

IMPROVEMENTS IN METALLURGICAL AND BOILER FURNACES.—The invention of Mr. ALEX. PARKES, of Gravelly Hill, Edgbaston, consists essentially of a chamber or generator in which gaseous fuel consisting mainly of carbonic oxide is generated, the gaseous fuel being conducted over a hollow bridge or hot air flue into a reverberatory chamber in which copper is smelted, or the puddling of iron or other like metallurgical operation is carried on. The hot air from the hot air flue mixing with the gaseous fuel effects its combustion, and produces an intense heat in the reverberatory chamber. The air supplied to the hollow bridge or hot air flue is heated by passing through the walls of the generator, which are reutilized, or honeycombed. The waste heat from the reverberatory chamber may be utilised by being passed to a second or cementing chamber, and from thence to a boiler for the generation of steam. The gas generator and hot air bridge may be applied to steam-boiler and other furnaces unconnected with metallurgical furnaces.

REGULATING THE FLOW OF GASES.—The apparatus invented by Mr. VICTOR BABLOX, of Paris, consists of a vertical cylinder, provided with lids at the top and bottom; these are both pierced to allow of free passage to the gas; the top lid, however, is pierced laterally, leaving the centre solid. Beneath the upper lid is a fixed division in which a piston moves without friction, and when in repose rests on the rim of the lower lid; to this piston a hollow shaft is connected and extends above it, and debouches just above the fixed division, through which it passes without friction. The object of this arrangement is as follows:—The gas coming from the main beneath the piston surmounts it, flowing round its sides and partly through the hollow shaft, if not closed by a plug with which its lower part is provided. The gas having reached above the piston enters the hollow shaft through side openings made therein beneath the fixed division, and escapes at the upper end of the shaft above the division, and thence proceeds to the burner or burners fed by the apparatus. The piston is more or less raised according to the pressure of the gas delivered from the main, which has the effect of raising the hollow shaft towards, or lowering it from, the solid part of the upper lid, thus automatically opening or closing the upper part of the hollow shaft, so regulating the delivery of gas to the burners. The central or solid part of the upper lid is slightly hollowed, so that the hollow shaft in rising slightly engages therein in closing; this renders the closing of the valve more efficient and progressive, and so prevents the vibrations to which the valve would be subjected in closing too abruptly. The quantity of gas or fluid delivered by this apparatus depends on the size of the orifice offered to it through the piston, as well as in the weight of the whole movable part which the gas or fluid raises.

TRAMWAY AND ROAD-CAR TRACTION.—A tube with a narrow longitudinal slot therein, slightly on one side thereof, and through which a rigid connection is effected between the car and the running endless rope or chain drive, and working within the tube, constitutes the invention of Mr. A. S. HALLIDAY, of Salisbury-street, and San Francisco. At the foot of this rigid connection a novel gripping and supporting arrangement is provided for enabling the running rope when gripped firmly to pass clear of the supporting and guiding pulleys within the tube whilst the car is running; and, when the car stops, the running rope is held taut by the supporting pulleys, attached to and simultaneously actuated on the movement employed for gripping and releasing alternately the traction rope. The up and down portions of the endless rope may both be contained within the same tube. The clip pulleys for transmitting the motion of the rope consist of a number of pairs of small jaws, each free to vibrate and grip the rope; these are carried between suitably formed hook flanges bolted together and forming the rim of the wheel.

PERCUSSIVE ROCK-DRILLS.—The piston, according to Col. BEATTY, MONY's invention is made of differential area, with a large piston rod in front bearing the drill, and a smaller rod behind fixed to a cross-head, which works a roller cirospicating slotted cams. The first cam has a curved slot, in which works a roller on a bell crank jointed to the slide for alternating the admission of water into the working fluid. The second cam works a pawl lever on the piston rod, so as to act on a ratchet wheel for turning the drill partly round at every stroke. The third cam works a pawl lever acting on a ratchet wheel on a sleeve nut, so as to turn the drill deeper. These parts are all accessible and separately adjustable on the exterior of the cylinder.

SUNSHINE AND MERRYFIELD LEAD MINING COMPANY

(LIMITED).

Incorporated 1st March, 1872.

Capital £15,000; in 7500 shares of £2 each.

Deposit, 10s. per share on application, and 10s. per share on allotment.

Future calls not to exceed 10s. per share, nor to be made at intervals of less than three months.

The mines are situated about three miles west of Pateley Bridge, near Leeds, where mining operations have been carried on from time immemorial, the bearing measures being fine thick beds of grit with intermediate beds of slate or strong shale, and are held for the residue of a term of twenty-one years (expiring in 1888), at the low royalty of one-fifth, or 1s. 4d. in the lb. of the sale price of the minerals raised therefrom.

The mining ground is bounded on the north-west by the Old Merryfield Mines, and on the west and south by the Pateley Bridge (Cock Hill) Lead Mines, and comprises within its limits the Sunshine and the Prosperous and Providence Mines, and also about 300 yards in length of the eastern end of the Merryfield Mines, and contains three lead veins or lodes, each running for a length of 555 fms. through the sett from east to west, and known as the Old Black or North Vein, the Middle Vein, and the South or Sun Vein.

For twenty years previous to 1843, when the mines ceased working, lead ore to the value of £100,000 had been raised from the North Vein between the surface and a depth of about 80 fms., in a length of 80 or 100 yards between the Prosperous and Providence Shafts, and the produce of these two mines alone averaged, up to that period, 240 pigs of lead (weighing 15 tons) per week.

The highest price paid for getting, raising to surface, and dressing the ore during the above named period did not exceed £2 10s. per pig of 8 cwt.; the lowest price being 4s. 6d. per pig, at which price many hundred tons of ore were raised. The royalty on the Providence Mines up to 1843 was 10s. per ton, with a yearly rent of £250, and in 1827 they were saddled with annuities of £970 during the remainder of the lease. The Prosperous Mines were held at a royalty of one-sixth, and for some years previous to 1843 returned to the owners about £1200 for royalty.

The North Vein was 14 yards wide near Providence Shaft, and a solid rib of ore nearly a yard wide is stated to have been left there in 1843, and still remains, at a depth of 152 yards from the surface.

Mr. Watson, one of the former lessees and working manager of the mines for twenty years up to 1843, looked upon the waste hillocks as a valuable reserve for future profit, and in a prospectus prepared by him in 1838 stated there was at that time "a produce obtainable from the outlying waste or refuse hillocks of several thousands of tons of ore."

These hillocks are of immense size, and are now being worked at a profit of upwards of 30 per cent., which might be materially increased by the use of additional and more suitable machinery for crushing and dressing purposes.

For prospectuses, and forms of application for shares, apply to THOS. STOKES, Esq., the Solicitor and Secretary of the Company, Harrogate, Yorkshire.

THE ROCK-BORING CONTRACT COMPANY.

DARLINGTON'S PATENT ROCK-BORING MACHINERY.

OFFICES, -2, COLEMAN STREET BUILDINGS, MOORGATE STREET, LONDON.

FOR TUNNELLING, DRIVING LEVELS, CROSS-CUTS, AND SINKING SHAFTS.

CO-OPERATIVE CREDIT BANK,

MANSHION HOUSE CHAMBERS,

11, QUEEN VICTORIA STREET, E.C.

First issue of capital: £500,000, in subscriptions of £10 and upwards.

Interest in lieu of dividend 18 per cent. per annum, paid monthly.

Current accounts opened, and 5 per cent. interest allowed on the minimum monthly balances.

CHEQUE BOOKS SUPPLIED.

The Bank transacts every description of sound financial business. Book-keeping in the hands of the subscribers, and a quarterly balance sheet issued by auditors appointed by them, independent of the management.

For particulars apply to—R. B. OAKLEY, Manager.

LOCOMOTIVE TANK ENGINES

FOR MAIN LINE TRAFFIC, SHORT LINES COLLIERIES CONTRACTORS, IRONWORKS, MANUFACTURERS, &c., from a superior specification, equal to their first-class Railway Engines, and special adapted to sharp curves and heavy gradients, may always be had at a short notice from—

MESSRS. BLACK, HAWTHORN, AND CO.,

LOCOMOTIVE, MARINE, AND STATIONARY ENGINE WORKS, GATESHEAD-ON-TYNE.

Preparing for publication.

OBSERVATIONS ON THE VALUATION OF MANUFACTORIES.

By THOS. FENWICK HEDLEY, Sunderland.

Copies of the following LETTERS and REPORTS, by THOS. FENWICK HEDLEY may be had, post free, on application to JNO. HUNT HEDLEY, 212, High-street, Sunderland, viz.:

- LOCAL TAXATION AND RATING GOVERNMENT PROPERTY, &c. 3s.
- OBSERVATIONS ON RATING MANSHION HOUSES. 1s.
- RATING MANSHION HOUSES IN HEXHAM UNION. 1s.
- THE VALUE OF PROFITS OF TRADE. 1s.
- RATING COAL MINES AND COLLIERY WAGON WAYS. 1s.
- " MACHINERY. 1s.
- " BLAST FURNACES, IN BLAST. 1s.
- " OUT OF BLAST. 1s.
- " WATERWORKS. 1s.
- " LEAD MINES. 1s.
- " RAILWAYS WORKED UNDER WORKING AGREEMENTS. 1s.

GUIDE TO INVESTMENTS.

Published monthly, 5s. per annum.

SPARGO'S "GUIDE TO INVESTMENTS" affords information (ample and correct) of all the best paying investments. Capitalists and men of business should consult the "Guide" for reliable and valuable intelligence.

THOMAS SPARGO, 62, Cornhill, E.C.—Established Twenty-six Years.

THE GREAT ADVERTISING MEDIUM FOR WALES.

THE SOUTH WALES EVENING TELEGRAM (DAILY), and SOUTH WALES GAZETTE (WEEKLY), established 1867, the largest and most widely circulated papers in Monmouthshire and South Wales. CHIEF OFFICES—NEWPORT, MON.; and at CARDIFF.

The "Evening Telegram" is published daily, the first edition at Three P.M., the second edition at Five P.M. On Friday, the "Telegram" is combined with the "South Wales Weekly Gazette," and advertisements ordered for not less than six consecutive insertions will be inserted at a uniform charge in both papers. P.O.O. and cheques payable to Henry Russell Evans, 14, Commercial-street Newport, Monmouthshire.

Now ready, price 3s., by post 3s. 3d., Sixth Edition; Twentieth Thousand Copy much improved, and enlarged to nearly 300 pages.

HOPKINSON'S CONVERSATIONS ON MINES, between Father and Son. The additions to the work are near 80 pages of useful information, principally questions and answers, with a view to assist applicants intending to pass an examination as mine managers, together with tables, rules of measurement, and other information on the moving and propelling power of ventilation, subject which has caused so much controversy.

The following few testimonials, out of hundreds in Mr. Hopkinson's possession speak to the value of the work:

"The book cannot fail to be well received by all connected with collieries."—Mining Journal.

"Such a work, well understood by miners, would do more to prevent colliery accidents than an army of inspectors."—Colliery Guardian.

"The contents are really valuable to the miners of this country."—Miners' Central.

London: MINING JOURNAL Office, 26, Fleet-street; and to be had of all book sellers.

Second Edition. Just published, price 5s. 6d.

NEW GUIDE TO THE IRON TRADE OR, MILL-MANAGERS' AND STOCK-TAKERS' ASSISTANT: Comprising a Series of New and Comprehensive Tables, practically arranged to show at one view the Weight of Iron required to produce Boiler plates, Sheet-iron, and Flat, Square, and Round Bars, as well as Hoop or Strip Iron of any dimension. To which is added a variety of Tables for the convenience of Merchants including a Russian Table. By JAMES ROSE.

OPINIONS OF THE PRESS.

"The Tables are plainly laid down, and the information desired can be instantly obtained."—Mining Journal.

"Good copies have been ordered in Wigan alone, and this is but a tithe of those to whom the book should commend itself."—Wigan Examiner.

"The work is replete with the subject of underground management."—M. BAKER Colliery Proprietor.

To be had on application at the MINING JOURNAL Office, 26, Fleet-street, London.

CAPTAIN ABRAHAM FRANCIS,

MINING AGENT, ENGINEER, AND SURVEYOR.

GOSNOLD, ABBEYSTWICH.

In the Court of the Vice-Warden of the Stannaries.

Stannaries of Cornwall.

IN the MATTER of the COMPANIES ACTS, 1862 and 1867, and in the MATTER of the LAMBERT MINING COMPANY (LIMITED).—Notice is hereby given, that a PETITION for the WINDING UP of the above-named company by the Court was, on the 9th day of October instant, presented to the Vice-Warden of the Stannaries by the said company, and that the said Petition is directed to be heard before the Vice-Warden, at the Law Institution, Chancery-lane, London, on Wednesday, the 27th day of October instant, at Twelve o'clock at noon.

Any contributory or creditor of the company may appear at the hearing and oppose the same, provided he has given at least two clear days' notice to the petitioners, their solicitors, or their agents, of his intention to do so, such notice to be forthwith forwarded to F. P. SMITH, Esq., Secretary of the Vice-Warden, Truro. Every such contributory or creditor is entitled to a copy of the Petition and affidavit verifying the same from the petitioners, their solicitors, or their agents, within 24 hours after requiring the same, on payment of the regulated charge per folio.

Affidavits intended to be used at the hearing, in opposition to the Petition, must be filed at the Registrar's Office, Truro, on or before the 25th day of October instant, and notice thereof must at the same time be given to the Petitioners, their solicitors, or their agents.

HODGE, HOCKIN, AND MARRACK, Truro, Cornwall.

(Agents for Tilly and Co., Falmouth.)

Agents for Geo. Davis Morgan and Co., 52, Moorgate-street, London, E.C., Petitioner's Solicitors.

Dated Truro, October 14th, 1875.

THE COMPANIES ACTS, 1862 AND 1867.

IN THE MATTER OF THE OLD BATHOLDS MINING COMPANY (LIMITED).

MESSRS. PYNE AND MURCHISON, Liquidators of the above Company, INVITE TENDERS for the PURCHASE of the VALUABLE LEASE and PLANT of the mine, including ROTARY STEAM ENGINE, with nearly new 10 ton BOILER, crushing machinery, winding and pumping gear, 60 fms. of 7 in. pumps, with two plunger lifts, 80 fms. of 1 in. best charcoal iron wire rope, 70 fms. 3 in. diameter hemp rope, 60 fms. of ladders, &c. The engine-shaft is sunk 63 fms. perpendicular, and is in good repair. Levels have been driven south from upper adit at various depths down to present bottom of the shaft, the 48 and 60 fms. levels, being 50 to 60 fms. in length, in both of which the great spar lode may be seen.

Considerable quantities of lead have been sold from this property from above the 48, and there are now several tons of lead ore undressed at surface.

This mine is situated in the same district as Tankerville, Roman Gravel, and Snailbeach, being between the two latter mines.

An inventory of the machinery, and Capt. A. Waters' reports on the mine, may be seen at the office of the Liquidators, where any further information can be obtained.

Tenders must be sent into the Liquidators on or before the 30th day of October next, who do not bind themselves to accept the highest or any tender.

S. Austinfrans, London, 23rd September.

VALUABLE MINING SETTS, MACHINERY, AND PLANT,

IN ST. IVES, CORNWALL, FOR SALE.

MR. A. BERRYMAN has been instructed to OFFER FOR SALE, BY AUCTION, on the Mine, on Wednesday, the 27th October instant, at Two o'clock in the afternoon, as a going concern, the WHOLE of the VALUABLE and EXTENSIVE MINING SETTS, called—

ST. IVES CONSOLS,

Situate in the parish of St. Ives, in the county of Cornwall, together with the WHOLE of the excellent PLANT and MACHINERY thereon, including—

ONE 60 in. PUMPING ENGINE, with TWO 10 ton BOILERS.
ONE 26 in. STAMPING ENGINE, with two large fly-wheels, wrought iron axle and sweep rod, with ONE 10 ton BOILER.
ONE 16 heads AXLE, and THREE 12 heads ditto, together 52 heads, with lifters, &c., complete.
ONE 22 in. WINDING ENGINE, with cage attached, and ONE 8 ton BOILER.
ONE 30 in. WINDING ENGINE, with cage attached, and ONE 10 ton BOILER.

ONE 6 in. horizontal ENGINE, with vertical multitubular BOILER, with an 8 ft. 4 in. working lift attached.

8 ft. 4 in. pit-rope; 27 fms. 12 in. ditto; 70 fms. 8 in. ditto; and 107 fms. 7 in. ditto, with H pieces, doorpieces, and working barrels, &c., complete; 20 fms. wood rods, 30 fms. 10 in. ditto, 30 fms. 9 in. ditto, 30 fms. 8 in. ditto, and 70 fms. 6 in. ditto, with strapping plates, &c., to match; 2 balance-bobs, balance rods, &c.; 50 fms. 2½ in. round iron rods, at surface, with joints, &c., complete; about 800 fms. of underground railroad, with tram wagons, &c.; all the tin floors, together with the excellent and lofty woodsheds covering the same; about 900 fms. ½ in. chain, kibbles, &c.; 21 large centre-head bobbles, 6 square ditto; 124 self-acting and other tin frames; Brunton's patent calculator, 12 ft. bed, with water wheel and driving gear; 3 plunger lifts for pumping slime; 4 water wheels for driving dressing machinery; a large number of tin kieves; and all the necessary dressing tools requisite for a large mine.

Also, the RICH TIN LEAVINGS throughout the mine, being the accumulations of many years, during the greater part of which this has been one of the largest tin-producing mines in the county. The sets are held upon favourable terms, are large in area, and comprise rich and productive mineral ground. The water charges are easy, and the mine is favourably situated for the supply of material.

ST. IVES CONSOLS has paid in profits to the adventurers about £140,000; and, coupling this with the fact that a large proportion of the ground included in the sets remains unexplored, a rare opportunity is now offered to an enterprising company for mining investment.

For further information and to view, apply on the Mine; to Capt. JOHN GILBERT, Capt. APLIN, the Purser, or to the Auctioneer, 25, Clarence-street, Penzance. Dated 11th October, 1875.

PERKINS BEACH LEAD MINE, NEAR MINSTERLEY, SALOP.

MESSRS. BARBER AND SON WILL SELL, BY AUCTION, at the George Hotel, Shrewsbury, on Friday, the 29th day of October, 1875, at Five o'clock in the afternoon, by order of the Liquidator, in One Lot, and subject to conditions unless previously disposed of by Private Treaty, the

PLANT, MACHINERY, AND OTHER EFFECTS

Lying in and upon the above mine, which is situate in the heart of the Shropshire lead mining district. It adjoins the Tankerville, and lies between that mine and the celebrated Snailbeach sett.

The plant includes THREE STEAM ENGINES, a large quantity of rails, timber, tools, stores, dressing floors, office and other fittings, and other effects. The sale will include all such interest as the Liquidator is empowered to dispose of in the leases under which the said mine is held.

Full particulars may be obtained from Mr. E. FIRMSTONE HEATH, Exchange Chambers, Wolverhampton; from Mr. R. D. NEWELL, Solicitor, or Messrs. BARBER and Son, both of Wellington.

N.B.—If the above property is not sold in One Lot, it will be offered in several lots upon the mine at a future day, of which due notice will be given.

STAFFORDSHIRE, NEAR CHEADLE.—FREEHOLD.

A COLLIERY, now being worked; a detached RESIDENCE; and upwards of TWENTY ACRES of LAND, with possession.

MR. ROBERT REID WILL SELL, BY AUCTION, at the Mart, Tokenhouse-yard, near the Bank of England, London, on Friday, the 5th day of November, at One Two o'clock precisely, in Three Lots, a valuable FREEHOLD PROPERTY, comprising—

THE HARLOW COLLIERY, Now being worked; a modern detached RESIDENCE, and several enclosures of rich pasture LAND, together containing 20A. 1A. 1P., at Harlow, on the road from Huntly to Draycott, about two miles from the market town of Cheadle, two miles and a half from the Cresswell, three miles and a half from Blyth Bridge Stations on the North Staffordshire Line from Derby to Crewe, connecting the Midland with the North Western Railways, nine miles from Stoke-upon-Trent, and fifteen miles from Stafford.

The property may be viewed. Particulars, with plans, may be obtained at the Wheat Sheaf Hotel, Cheadle; and in London of Messrs. HODGKINSON and WATTS, Solicitors, 17, Little Tower-street, E.C.; and of Mr. ROBERT REID, 48, Great Marlborough-street, W.

TIMBER FOR SALE.

TO BE SOLD, at GLENMORE (otherwise East Ballygally), near LIMERICK, in the County of WATERFORD, a large quantity of different kinds of TIMBER, consisting of ASH, ELM, BEECH, SYCAMORE, HORSE CHESTNUT, LARCH, SPRUCE, SCOTCH and SILVER FIR, very tall and straight; also some gross HOLLY and LAUREL.

The Tallow Road Station, on the Fermoy and Lismore Railway, is within one mile.—Apply, by letter, or otherwise, to NELSON T. FOLEY, Ballygally, Lismore, County Waterford.—October, 1875.

TO CAPITALISTS OR PROMOTERS DESIRING TO MAKE MONEY.

TO BE SOLD, A COLLIERY ROYALTY IN NORTH WALES, close to rail shipping port; several shafts partially sunk; coal fully proved of FOUR BEAMS of good HOUSE and STEAM COALS, in an area of upwards of 400 acres of surface. It adjoins the West Mostyn Coal Field, just successfully launched, where under seams (including Cannel) have been proved in addition to the above; so that eminent engineers state that the available coal in this royalty may be 88 feet thick.

Present holder will arrange to sell the entire to an individual or company for what it has cost him, dividing all profit made above, which, even in a normal state of the coal trade, must be large. Certain and safe surveys by eminent Staffordshire and Welsh engineers have already been made.

Address, "Nil Desperandum," care of Mr. Watson, 16, Fenwick-street, Liverpool.

NORTH VAN SILVER-LEAD MINE.

TO BE LET, for a term of years, the RIGHT to SEARCH FOR and TAKE ORES and MINERALS upon and from the above Mine, situate on the Farm of CYBEILFA, in the parish of TREFEGLWYS, in the county of MONTGOMERY, and in the immediate neighbourhood of the celebrated VAN MINE. A shaft has been sunk, and considerable progress made with the works, and it is believed that with the expenditure of a little further capital large profits would be realised.

For further particulars, with permission to view the property, apply to Messrs. WILLIAMS and GITTINS, Solicitors, Newtown, Montgomeryshire.

THE HENDON SPELTER WORKS.

TO CAPITALISTS, PROMOTERS OF PUBLIC COMPANIES, & OTHERS.

FOR SALE, in consequence of the Death of the late Senior Partner, John Candler, M.P., the SPELTER WORKS, situate at Hendon, in the borough of Sunderland, in the county of Durham, carried on under the style of "THE HENDON SPELTER COMPANY."

The works are situated within one mile of the well-known docks of the port of Sunderland, and adjoining the Hartlepool Branch of the North Eastern Railway, with which they are connected by high and low level sidings, and thereby placed in communication with all parts of the United Kingdom. Their position, within easy distance of both the ports of Newcastle and Sunderland, is very advantageous for the cheap importation of raw material, as also the forwarding of the manufactured article either by land or sea.

The ground on which the works are built can be either bought out or bought on a yearly perpetual ground rent, and any quantity under 20 acres can be included in the sale.

Being situated in the midst of the Durham Coal Field fuel of the best description can be obtained at a cost below almost any other part of the United Kingdom. There are 19 workmen's cottages, which can be bought with the works.

The works contain 24 zinc furnaces, capable of producing 70 tons of metal a week, as also calciners, potfolds, machinery, blacksmiths' and joiners' shops, &c., of sufficient capacity for a much larger number. The works can, therefore, be doubled at a comparatively small cost.

The quality of the metal made at these works is well known, and it, therefore, commands a ready sale at the highest prices.

Attached to the high level sidings are large depôts for coal, ore, &c. The goodwill would, of course, go with the works, and they will be sold subject to all stock being taken at a fair market value.

The purchaser can also have the option of buying the CALCINING WORKS and VALUABLE MINES in SPAIN, thus allowing of the economical and regular supply of the raw material, and saving the mineowners' and merchants' profits.

As the ore from the South of Spain generally comes as ballast for ships laden with esparto, it has been brought for this company at an average cost of 7s. per ton, sometimes as low as 4s. 6d.

Further particulars can be had on application to the company.

MINERALS TO BE LET.

TO BE LET BY TENDER, ALL THE MINERALS ABOVE AND INCLUDING the No. 3 RHONDDA SEAM, lying under the several FARMS, called COED-Y-LAY, TYN-Y-COED, LLANILID, TYLCHA WEN, GELLY SEREN, and TON THRAWG, situate in the several parishes of LLANILID and LLANTRISANT, in the ELY VALLEY, GLAMORGANSHIRE, containing together by admeasurement 587 acres or thereabouts.

The property is most advantageously situated, being only distant 16 miles by the present route from the port of Cardiff, with which this property is connected by means of the Ely Valley Railway, running through the lands, and forming a junction with the Great Western Railway at Llantrissant, thus affording direct communication with all parts of the kingdom. The ports of Newport and Swansea are also easy of access by means of the above-mentioned route.

The Llantrissant and Taff Vale Junction Railway, which is now opened, runs within two miles of the property, and in conjunction with the Ely Valley Railway will greatly reduce the distance to Cardiff, and afford great facilities for the conveyance and shipment of the minerals to be worked from this property, which contains the whole of the mineral seams in the South Wales basin underlying the Llantrissant seam.

This mineral property, from its advantageous position, is the key to a very large area of minerals lying to the rise of a level course, and, being the only practicable outlet for such minerals, it will enable the same to be worked to greater advantage than from any other quarter, by means of which a large income will be obtained by the owners and lessees of this property in the shape of way leave to be paid by the adjoining lessees.

Full particulars and terms of letting can be had on application to Mr. HERBERT KIRKMAN, Mineral Engineer, Fenchurch-street, London; Messrs. SMITH, DAVIES, and Co., Solicitors, 1A, Frederick's-place, Old Jewry, London; or Messrs. DAVIES and Co., Solicitors, Haverfordwest.

CHINA CLAY AND TIN, COPPER, AND IRON ORES

IN CORNWALL.

THE LESSEE'S INTEREST in certain VALUABLE CHINA CLAY AND TIN WORKS, in full operation, and also in certain CHINA CLAY AND TIN, COPPER, AND IRON ORES SETTS in CORNWALL to BE DISPOSED OF.

Full particulars can be obtained on application to Mr. S. N. SCOTT, China Clay Merchant, St. Austell.

COPPER MINE FOR SALE.

FOR SALE, A COPPER MINE, IN FULL WORKING ORDER, in one of the best districts in CORNWALL. Regular and profitable returns are made. Water charges easy. Proprietors are prepared to treat for the entirety or a part of the property.

Apply, in the first instance, to "A. B.," Post Office, Redruth, Cornwall.

REDUCTION OF PRICES.

PORTABLE ENGINES, ready for immediate delivery:—

SINGLE CYLINDER ENGINES.		DOUBLE CYLINDER ENGINES.	
7 h.p., with 9 in. cylinder.	9 h.p., with 2 7/8 in. cylinders.	10 h.p., with 2 7/8 in. cylinders.	12 h.p., with 2 7/8 in. cylinders.
8 h.p., with 9 1/2 in. cylinder.	10 h.p., with 2 7/8 in. cylinders.	12 h.p., with 2 7/8 in. cylinders.	14 h.p., with 2 7/8 in. cylinders.
10 h.p., with 10 1/2 in. cylinder.	12 h.p., with 2 7/8 in. cylinders.	14 h.p., with 2 7/8 in. cylinders.	20 h.p., with 2 7/8 in. cylinders.

VERTICAL ENGINES, COMBINED WITH BOILERS:—2 h.p., 3 h.p., 4 h.p. Prices and full particulars free on application.

LEWIN, POOLE WORKS, DORSET.

CONDENSING AND NON-CONDENSING HORIZONTAL STEAM ENGINES, of the highest class, at low prices.

PLANTING AND WINDING ENGINES. First-class references. ENGINES' TOOLS of all kinds, unrivalled for arrangement and general usefulness, at low prices. Inspection invited.

POLLOCK AND MACNAB,

BRITANNIA IRONWORKS, HYDE, NEAR MANCHESTER.

PORTABLE STEAM ENGINE FOR SALE, with two 13½ in. cylinders; also ONE with two 11½ in. cylinders, both with link motion reversing gear, and with or without gearing to wind and pump.

FOR SALE, A GOOD SECOND-HAND 6-horse power PORTABLE ENGINE, with a new 6 ft. pan mortar mill. Price of both, £145.

To be seen at—BARROWS AND STEWART'S WORKS, BANBURY.

THE LONDON CRITERION OF MACHINERY.

TOOLS, HARDWARE, METALS, &c.

A Monthly Price-List and Advertiser of New and Second-hand Machinery, Tools, Contractors' Plant, and Materials on Sale.

To all users of steam-power and others requiring machinery of any description this list will be found most useful, and for constant reference an invaluable guide to engineers, shippers, and public companies. Specifications, plans, and estimates supplied for all kinds of machinery, tools, and materials.

Advertisements and entries received up to the 25th of each month.

Send stamps for copy.

J. T. RODDA AND CO., ENGINEERS,

Contractors, Iron, Steel, Hardware, and Machinery Commission Agents,

122, CANNON STREET, LONDON, E.C.

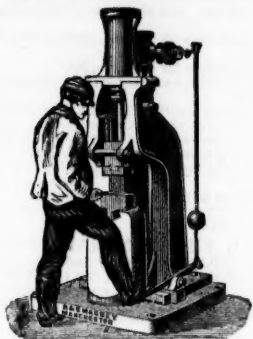
RAILWAY CARRIAGE COMPANY (LIMITED).—

ESTABLISHED 1847. OLDBURY WORKS, NEAR BIRMINGHAM. MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, and EVERY DESCRIPTION OF IRONWORK.

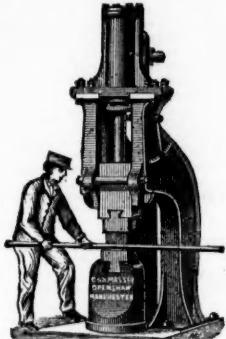
B. & S. MASSEY, OPENSHAW, MANCHESTER.

PRIZE MEDALS Awarded:—Paris, 1867 Havre, 1868 Highland Society, 1870; Liverpool, 1871; Moscow, 1872; Vienna, 1873; Scientific Industry Society, 1875

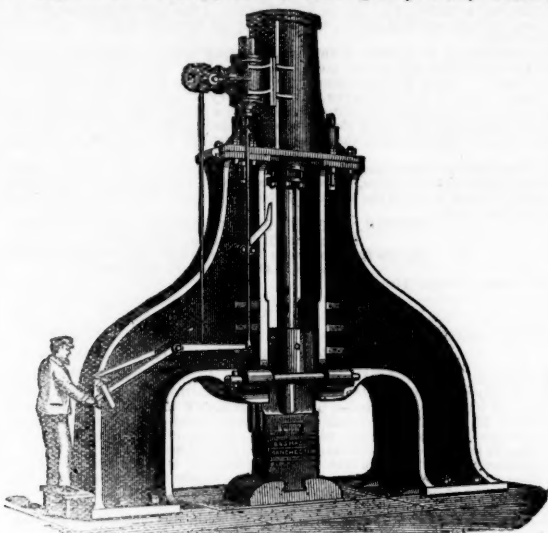
Patentees and Makers of Double and Single-acting STEAM HAMMERS of all sizes, from ½ cwt. to 20 tons, with self-acting or hand motions, in either case giving a perfectly DEAD BLOW, while the former may be worked by hand when desired. Large Hammers, with Improved Framing, in Cast or Wrought Iron. Small Hammers, working up to 500 blows per minute, in some cases being worked by the Foot of the Smith, and not requiring any separate Driver.



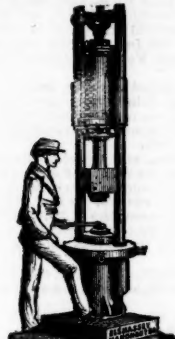
Hammer with Foot Motion.



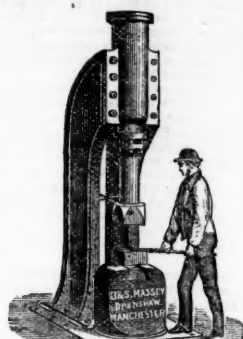
General Smithy Hammer.



Steam Hammer for Heavy Forging.



Special Steam Stamp.

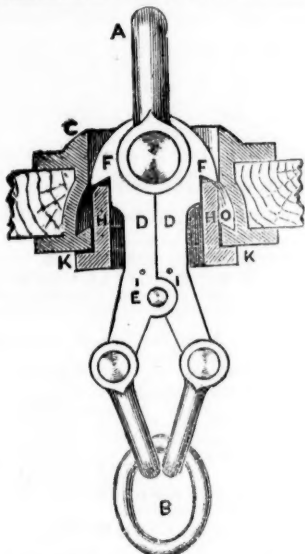


General Smithy Hammer.

From 60 to 100 Steam Hammers and Steam Stamps may usually be seen in construction at the Works.

SPECIAL STEAM STAMPS, of great importance for Forging, Stamping, Punching, Bolt-making, Bending, &c. STEAM HAMMERS for Engineers, Machinists, Shipbuilders, Steel Tilters, Millwrights, Copper-smiths, Railway Carriage and Wagon Builders, Colliery Proprietors, Ship Smiths, Bolt Makers, Cutlers, File Makers, Spindle and Flyer Makers, Spade Makers, Locomotive and other Wheel Makers, &c.; also for Use in Repairing Smithies of Mills and Works of all kinds; for straightening Bars, bending Cranks, breaking Pig-iron, &c.

OVERWINDING IMPOSSIBLE. WALKER'S DETACHING HOOK, FOR COLLIERIES AND BLAST-FURNACE HOISTS.



SIX LIVES SAVED.

Walker's Hook, at Tockett's sinking, has saved six men's lives. On the 6th instant, the kibble was overwound, and but for the hook would have fallen down the pit, where six men were working, 120 ft below, all of whom would probably have been killed. Thanks, however, to Mr. Walker's invention, the rope alone passed harmlessly over, the kibble remained suspended, and in half-an-hour everything was working as if nothing had occurred.—From the Northern Echo August 20, 1874.

Full particulars may be obtained from the Manufacturers.—

THOMAS WALKER AND SON, 58, OXFORD STREET, BIRMINGHAM

DUNN'S ROCK DRILL, AND AIR COMPRESSORS.

FOR DRIVING BED ROCK TUNNELS, SINKING SHAFTS, AND PERFORMING OPEN FIELD OPERATIONS, IS THE CHEAPEST, SIMPLEST, STRONGEST, & MOST EFFECTIVE DRILL IN THE WORLD.

OFFICE,—193, GOSWELL ROAD (W. W. DUNN AND CO.), LONDON, E.C.

INCREASED VALUE OF WATER POWER.

THE EXTRAORDINARY ADVANCE in the PRICE of COALS has DIRECTED more ATTENTION to WATER-POWER, and to the BEST MANNER of APPLYING IT. For many years it has been, to a great extent, neglected and undervalued. One great objection to it has been the variable nature of most streams in these countries, having abundance of water during the winter half-year, and very little in the dry season. No kind of wheel hitherto known was able to give the proper proportion of power from the smaller quantities of water, so that it became the practice very generally to use steam entirely during the summer half of the year, letting the water go to waste. This is now completely prevented, and the full available power can be obtained from a stream at every season by using

Mac Adam's Variable Turbine.

This wheel (which is now largely in use in England, Scotland, and Ireland) is the only one yet invented which gives proportionate power from both large and small quantities of water. It can be made for using a large winter supply, and yet work with equal efficiency through all variations of quantity down to a fifth, or even less if required. It is easily coupled to a steam-engine, and, in this way, always assists it by whatever amount of power the water is capable of giving, and, therefore, saves so much fuel.

This Turbine is applicable to all heights of fall. It works immersed in the tail-water, so that no part of the fall is lost, and the motion of the wheel is not affected by floods or back water.

References to places where it is at work will be given on application to the makers.

MAC ADAM BROTHERS AND CO., ENGINEERS, BELFAST.

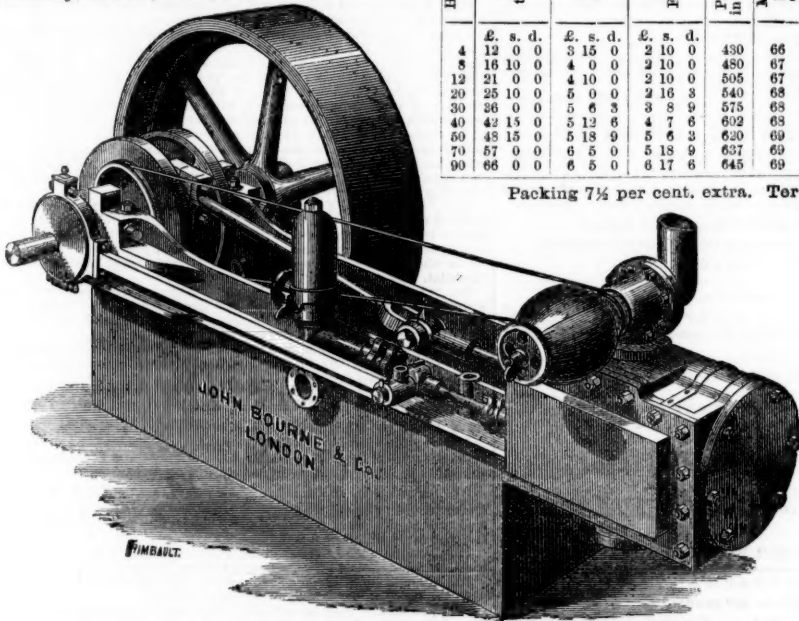
BOURNE'S PATENT BALANCED High-Pressure High-Speed Engines. THE BEST AND CHEAPEST SMALL ENGINES MADE.

These engines have just been awarded a Silver Medal at the Manchester Exhibition, and about 1800 H.P. of them have been sold in a few months to North and South America, New Zealand, Australia, the Cape, Russia, Spain, Portugal, France, Germany, Sweden, China, &c.

PRICES.

Horse-power (actual).	Engine at the Works.	Extra for Governor.	Extra for Feed-Pump.	Piston speed in ft. per min.	Mean press. per sq. in. on piston.	Tubular Boiler.	Extra for Mountings.
4	£. s. d. 12 0 0	£. s. d. 3 15 0	£. s. d. 2 10 0	430	66	£. s. d. 27 17 0	£. s. d. 10 10 0
8	16 10 0	4 0 0	2 10 0	480	67	35 8 6	10 18 6
12	21 0 0	4 10 0	2 10 0	505	67	40 2 0	11 18 0
20	25 10 0	5 0 0	2 16 3	540	68	47 18 0	13 2 0
30	36 0 0	5 6 3	3 8 9	575	68	57 19 4	15 18 0
40	42 15 0	5 12 6	4 7 6	602	68	70 9 0	17 11 0
60	48 15 0	5 18 9	5 4 3	620	69	84 4 0	18 2 0
70	57 0 0	6 5 0	5 18 9	637	69	Two boilers.	
90	66 0 0	6 5 0	6 17 6	645	69	Two boilers.	

Packing 7½ per cent. extra. Terms, Cash.



From ANDREW LAMB, Esq., Superintending Engineer, P. and O. Steam Co.

Peninsular and Oriental Steam Navigation Company, Southampton, March, 1875.

I have carefully examined your Patented High-Pressure High-Speed Steam-Engine. Knowing as I do how many improvements in the steam-engine you have inaugurated during the last forty years, which have been silently adopted and are now in general use, it does not surprise me that you have again made a happy hit, and brought out an engine which exactly meets one of the most pressing wants of the day. The speed and pressure of your engine are greater than is usual in other engines; but with a due proportion of rubbing surface, nothing in the way of undue wear is to be apprehended from the speed, and boilers and engines can easily be made strong enough to bear almost any pressure with safety. The indicator diagrams are very good, and they show that though the engine is small it generates the power. Your invention of balancing the momentum of the moving parts, already adopted in the best engines for steam navigation, enables engines to be run at almost any speed without inconvenience, if well constructed in other respects; and in your present engine you have embodied the best engineering knowledge of the age, with the addition of several features of originality and importance. While, then, the disadvantages of your engine are *nil*, its advantages are great and manifest. A high pressure and high speed render possible large expansion, with a great saving both in coal and water. Then the motion is more equable than in common engines, and the weight of machinery and the space occupied by it are small. The most remarkable feature, however, is the wonderful reduction of first cost which your system permits; and people will now have engines who before thought them quite beyond their reach. Their production, as I understand, you have reduced to a manufacture. To sum up the whole in a few words, you have, in my opinion, brought out a machine long wanted, and likely to produce a revolution in that class of engine, as it can be adapted for almost any purpose.

To John Bourne, Esq., C.E., Author of "A Treatise on the Steam-Engine," "A Catechism of the Steam-Engine," &c., &c.

Balanced Compounds for Pumping and Winding, for Mills, &c., equally moderate.

JOHN BOURNE AND CO., 66, Mark Lane, London.

PUNCHING & SHEARING MACHINES,

Suitable for Collieries, Shipbuilders, Boiler Makers, Ironworks, &c.

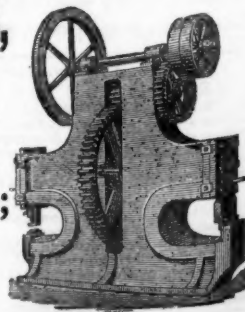
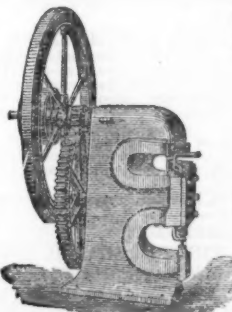
Self-acting, Slide, and Screw-cutting Lathes;

Slotting Machines; Shaping Machines;

Drilling, Planing, and Screwing Machines;

And Miscellaneous Tools of every kind always in Stock.

J. GOODWORTH, KIRKSTALL ROAD, LEEDS.



NOBEL'S DYNAMITE

Is the MOST ECONOMICAL and POWERFUL EXPLOSIVE for every kind of MINING and QUARRYING OPERATIONS; for blasting in hard or soft, wet or dry ROCKS; for clearing land of TREE ROOTS and BOULDER STONES; for rending massive BLOCKS of METAL; for SUBAQUEOUS and TORPEDO purposes; and for recovering or clearing away of WRECKS, &c.

ITS SAFETY is evidenced by the total ABSENCE OF ACCIDENTS in transit and storage; it is insensible to heavy shocks, its GIANT POWER being only fully developed when fired with a powerful percussion detonator, and hence its great safety.

As a SUBSTITUTE FOR GUNPOWDER its advantages are the GREAT SAVING OF LABOUR, rapidity and INCREASE OF WORK done, FEWER and smaller BORE-HOLES required, greater depth blasted, safety in use NO DANGER FROM TAMPING, absence of smoke, unaffected by damp, &c.

For information, apply to the—

BRITISH DYNAMITE COMPANY (LIMITED), GLASGOW;
OR AT THE

London Export Office, 85, GRACECHURCH STREET, LONDON, E.C.

THE DARLINGTON ROCK BORER.

No VALVE—BLOW obtained by the movement of the PISTON.

IN USE IN FRANCE, GERMANY, SPAIN, AND ELSEWHERE.

Rock Borers, Air Compressors, and Electric Blasting Apparatus.

Sole Agents and Manufacturers for France.—The Blancy

Mining Company,

WHERE BORERS MAY BE SEEN IN OPERATION.

For letter of introduction, particulars, &c., apply to—

JOHN DARLINGTON,

2, COLEMAN STREET BUILDINGS, MOORGATE STREET, LONDON.

MINING MACHINERY AND TOOLS.

THE TUCKINGMILL FOUNDRY COMPANY,

85, GRACECHURCH STREET, LONDON, E.C. WORKS: TUCKINGMILL.

MANUFACTURERS of every description of MINING MACHINERY, TOOLS, MILLWORK, PUMPING, WINDING, & STAMPING ENGINES.

SOLE MAKERS OF

BORLASE'S PATENT ORE-DRESSING MACHINES AND PULVERISERS.

PRICE LISTS CAN BE HAD ON APPLICATION, AND

SPECIAL QUOTATIONS WILL BE GIVEN UPON INDENTS AND SPECIFICATIONS.

TUCKINGMILL FOUNDRY AND ROSEWORTHY HAMMER MILLS

TUCKINGMILL, CORNWALL, AND 85, GRACECHURCH STREET, LONDON, E.C.

N. HOLMAN AND SONS,

BRASS AND IRON FOUNDRIES AND ENGINE WORKS,

PENZANCE AND ST. JUST, CORNWALL.

Sole Makers of Stephens's Improved Patent Pulveriser,

FOR REDUCING TIN ROUGHS, LEAD SKIMPINGS, AND OTHER ORES.

The advantages possessed by these machines over others are—

- 1.—THE CHEAPNESS.
- 2.—THE SIMPLICITY OF CONSTRUCTION.
- 3.—THE DURABILITY OF THE WEARING PARTS.
- 4.—THE QUANTITY OF STUFF PULVERISED.

- 5.—THE PERFECT MANNER IN WHICH IT IS DONE.
- 6.—THE SMALL AMOUNT OF POWER REQUIRED TO DRIVE THEM.

MACHINES MADE SPECIALLY FOR EXPORTATION.

For prices, testimonials, and further particulars, apply to N. H. and Sons, Sole Makers, at the above address, or to our London Agent below.

N.B.—Any person or persons infringing on the patent or manufacture of these machines, or any part thereof, will be prosecuted under the Act.

Estimates given for all classes of Mining Machinery, &c., for home and foreign supply.

ORDERS PROMPTLY ATTENDED TO.

London Agent—Mr. J. COATES, 33, Frederick Street, Gray's Inn Road, London, W.C.

PORTABLE ENGINES & THRASHING MACHINES.

ROYAL AGRICULTURAL SOCIETY'S SHOW,

TAUNTON. 1875.

CLAYTON AND SHUTTLEWORTH

Have much pleasure in announcing that they were awarded the

SPECIAL FIRST PRIZE

At this Meeting for their

PATENT COMBINED GUARD AND FEEDER

TO THE DRUMS OF

THRASHING MACHINES.

CLAYTON AND SHUTTLEWORTH have received FIRST PRIZES AT EVERY MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND at which they have competed since 1849; and since 1867 they have been awarded ALL THE FIRST PRIZES FOR STEAM ENGINES. Also at

VIENNA UNIVERSAL EXHIBITION, 1873.

THE SPECIAL DIPLOMA OF HONOUR FOR AGRICULTURAL MACHINERY.

MOSCOW GREAT EXHIBITION, 1872.—TWO GOLD MEDALS.

C. and S. are now prepared to EXECUTE ORDERS PROMPTLY for PORTABLE ENGINES AND THRASHING MACHINES, TRACTION ENGINES, FIXED HORIZONTAL ENGINES, &c., &c.

Revised Price Lists and Catalogues free by post on application to—

CLAYTON AND SHUTTLEWORTH, LINCOLN;

78, LOMBARD STREET, LONDON; and 35 and 37, TARLETON STREET, LIVERPOOL.

VARLEY & YEADON, COLLIERY & BRICK-MAKING ENGINEERS,

Manufacturers of WINDING, HAULING, and PUMPING ENGINES, Boilers and Fittings, Steam Piping, Donkey Pumps, Lift Pumps, Perforated Clay and Mortar Mills, Brick Presses, Pug Mills, Round and Flat Rope, Pit-head Pulleys, Wrought-iron Head Gear, ROOFS and GIRDERS, KIBBLES, ONE, TWO, and THREE-DECK CAGES, COAL TIPPING and SCREENING APPARATUS, VENTILATING FANS, TUBBING, GIRDERS, PILLARS, POINT PLATES. Steam or other Cranes, Crabs and Windlasses, Machines for Cutting Stone, &c.

CROWN POINT FOUNDRY, LEEDS.

Estimates furnished on application.

BICKFORD'S PATENT
FOR CONVEYING
CHARGE IN



SAFETY FUSE,
FIRE TO THE
BLASTING ROCKS, &c.

Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1862 and 1874, in London; at the "IMPERIAL EXPOSITION," held in Paris, in 1867; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; at the "UNIVERSAL EXPOSITION," in Paris, 1867; at the "GREAT INDUSTRIAL EXHIBITION," at Altona, in 1869; TWO MEDALS at the "UNIVERSAL EXHIBITION," Vienna, in 1873; and at the "EXPOSICION NACIONAL ARGENTINA," Cordova, South America, 1872.



BICKFORD, SMITH AND CO.,
of TUCKINGMILL, CORNWALL; ADELPHI
BANK CHAMBERS, SOUTH JOHN-STREET, LIVER-
POOL; and 85, GRACECHURCH-STREET, LONDON,
E.C., MANUFACTURERS AND ORIGINAL
PATENTEES of SAFETY-FUSE, having been in-
formed that the name of their firm has been attached to
fuse not of their manufacture, beg to call the attention of
the trade and public to the following announcement:—

EVERY COIL of FUSE MANUFACTURED by them has TWO SEPARATE
THREADS PASSING THROUGH the COLUMN of GUNPOWDER, and BICK-
FORD, SMITH, AND CO. CLAIM SUCH TWO SEPARATE THREADS as
THEIR TRADE MARK.

BENNETTS' SAFETY FUSE WORKS,
ROSKEAR, CAMBORNE, CORNWALL.

BLASTING FUSE FOR MINING AND ENGINEERING
PURPOSES,

Suitable for wet or dry ground, and effective in Tropical or Polar Climates.

W. BENNETTS, having had many years experience as chief engineer with
Messrs. Bickford, Smith, and Co., is now enabled to offer Fuse of every variety of
his own manufacture, of best quality, and at moderate prices.
Price Lists and Sample Cards may be had on application at the above address.
LONDON OFFICE—H. HUGHES, ESQ., 85, GRACECHURCH STREET.

TO COLLIERY FURNISHERS, &c. &c.

AGENTS WANTED in all Mining Districts for the LANDAU MINERS' LIFE
PROTECTING LAMP. For particulars, apply to Messrs. LANDAU, Coal
Merchants, and Manufacturers of several important inventions, 220, HIGH
HOLBORN, LONDON, W.C.



STRONGLY RECOMMENDED! HIGHLY APPRECIATED!!

THE LANDAU MINERS' LIFE-PROTECTING LAMP.

The objects attained by the Patent Lamp are:—

- 1.—It is a perfect safeguard against explosion.
- 2.—Great brilliancy of light at a very small expenditure of oil.
- 3.—It is in no way affected by the strongest current of air in the mine.
- 4.—It is impossible for the miner to tamper with it with impunity.
- 5.—All the above improvements can be adapted by Messrs. Landau to any other lamps at present in use.

Important testimonials, confirming the above statements, will be forwarded on application by—

MESSRS. LANDAU,

COAL MERCHANTS AND MANUFACTURERS OF SEVERAL IMPORTANT
INVENTIONS,

220, HIGH HOLBORN, LONDON, W.C.

TO MACHINISTS, BLACKSMITHS, QUARRYMEN, MINERS, &c.

F. J. MERRY'S

"RESTITUTOR CHALYBIS."

A valuable preparation for INSTANTANEOUSLY RESTORING TO BURNT
STEEL ITS LOST PROPERTIES, and rendering BURNT STEEL TOOLS,
which would otherwise be waste, AS EFFECTIVE AS BEFORE.
Price in tins, 35s. per gallon; in less quantities, 10s. 6d. per quart. Railway
carriage paid on all orders of two gallons, or above.

Full instructions delivered with invoice. Address,—

F. J. MERRY, 4, GLOUCESTER PLACE, SWANSEA.

THOMAS TURTON AND SONS,

MANUFACTURERS OF

CAST STEEL for PUNCHES, TAPS, and DIES
TURNING TOOLS, CHISELS, &c.

CAST STEEL PISTON RODS, CRANK PINS, CON-
NECTING RODS, STRAIGHT and CRANK

AXLES, SHAFTS and

FORGINGS of EVERY DESCRIPTION.

DOUBLE SHEAR STEEL

BLISTER STEEL.

SPRING STEEL.

GERMAN STEEL.

FILES MARKED

T. T. U. P. T. O. N

EMIGRANT MARKED

WM. GREAVES & SON

Locomotive Engine, Railway Carriage and Wagon
Springs and Buffers.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.

LONDON WAREHOUSE, 35, QUEEN STREET, CANNON STREET, CITY, E.C.

Where the largest stock of steel, files, tools, &c., may be selected from.

JOHN AND EDWIN WRIGHT,

PATENTEES.

(ESTABLISHED 1770.)

MANUFACTURERS OF EVERY DESCRIPTION OF
IMPROVED

PATENT FLAT AND ROUND WIRE ROPES

from the very best quality of charcoal iron and steel wire.

PATENT FLAT AND ROUND HEMP ROPES,

SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CON-
DUCTORS, STEAM PLOUGH ROPES (made from Wedder and Horsfall's
patent steel wire), HEMP, FLAX, ENGINE YARN, COTTON WASTE
TARPAULING, OIL SHEETS, BRATTICE CLOTHS, &c.

UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.

UNIVERSE WORKS, GARRISON STREET, BIRMINGHAM.

CITY OFFICE, No. 5, LEA ENHALL STREET, LONDON E.

BRITANNIA RUBBER AND KAMPTULICON COMPANY,

32, Cannon-street, and 86, Queen Victoria-street, E.C.

KAMPTULICON.

A Warm, Soft, and Noiseless Floor Cloth.
For Hotels, Clubs, and Public Buildings.
For Counting Houses and Shops.

KAMPTULICON.

For Library, Study, and Billiard Room.
For Halls and Stone Buildings.
For Railway Waiting Rooms.

INDIA RUBBER

GARDEN HOSE.
In 60 feet lengths, with
Brass Fittings, complete.
Garden Syringes, Hose, Reels, &c.

INDIA RUBBER

DOOR MATS.
Suitable also for Carriages, Dog Carts, &c.
Patent Draught and Dust Excluder.
Patterns and Price Lists upon application.

INDIA RUBBER

WATERPROOF GARMENTS.
Ladies' Waterproof Mantles.
Gentlemen's Waterproof Coats.
Driving Aprons, Fishing Stockings,
Air, Water Beds, Pillows, Cushions, &c.

VULCANISED INDIA RUBBER

Carriage and Engine Springs.
Wheel Tyres, Suction Hose, Solid Cord.
Sheet Rubber, Washers, Valves, Driving Bands.
Superior Leather Cloths, &c.

BRITANNIA RUBBER AND KAMPTULICON COMPANY

32, Cannon-street, and 86, Queen Victoria-street, E.C.

Just published. Free Edition.

GUIDE TO HEALTH; or, ADVICE AND INSTRUCTIONS FOR
THE CURE OF NERVOUS DEBILITY.—A New Medical Work on the
Treatment of Local Debility, Consumption, Loss of Memory, Physical Depression,
Indigestion, and all diseases resulting from loss of nerve power. Illustrated with
cases and testimonials. Sent free for two stamps.—Dr. SMITH will, for the benefit
of country patients, on receiving a description of their case, send a confidential
letter of advice.
Address, Dr. H. SMITH, 8 Burton-crescent London, W.C.

THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.									
Shares.	Mines.	Prd.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid		
1500	Alderley Edge, c, Cheshire	10 00	1 1/2	1 1/2	13 8 0	0 8 0	0 8 0	Jan. 1875	
3000	Bampfylde, c, t, Devon	1 00	1 1/2	1 1/2	0 2 0	0 2 0	0 2 0	June 1873	
4000	Blaken Caelan, c, t, Cardigan (24 sh.)	3 00	1 1/2	1 1/2	0 10 0	0 10 0	0 10 0	Aug. 1872	
200	Blaenau, c, t, St. Just	116 50	60	40 50	619 10 0	5 0 0	0 6 0	Jan. 1875	
16000	Bronfod, c, t, Cardigan	1 7 6	5	4 1/2	3 10 0	0 3 0	0 4 0	July 1875	
4000	Brockwood, c, Buckfastleigh	1 00	5	3 1/2	4 16 3	0 12 6	0 12 6	Oct. 1872	
3348	Cargill, c, t, Newlyn	5 00	3 1/2	3 1/2	1 9 6	0 2 0	0 2 0	Aug. 1875	
6400	Cashwell, c, t, Cumberland	2 00	5 1/2	5 60	308 0 0	1 0 0	0 7 6	Feb. 1874	
1000	Carb, c, t, Illogan	35 00	5 1/2	5 60	0 7 6	0 7 6	0 7 6	Jan. 1873	
8000	Cath, c, t, Penryn	21 9 9	8 1/2	8 1/2	11 17 0	0 7 6	0 7 6	Jan. 1873	
2450	Cock's Kitchen, c, t, Illogan	5 00	3 1/2	2 3/4	116 10 0	0 12 0	0 12 0	May 1872	
10240	Devon Gt. Consols, c, Tavistock	1 00	47	47 40	107 6 0	0 10 0	0 10 0	Aug. 1875	
4296	Dolcoath, c, t, Camborne	10 14 10	1 1/2	1 1/2	0 2 0	0 2 0	0 2 0	Oct. 1874	
6500	Drake Walls, c, t, Calstock	6 00	1 1/2	1 1/2	0 2 11 0	0 5 0	0 5 0	Feb. 1874	
10000	East Ballewidden, c, t, Sancerre	1 00	1 1/2	2 1/2	14 19 0	0 2 0	0 2 0	Oct. 1872	
6144	East Carron, c, t, Cardigan	32 00	1 1/2	2 1/2	280 10 0	1 0 0	0 1 0	Sept. 1875	
300	East Pool, c, t, Illogan	0 9 9	15	15 15 1/2	18 18 3	0 4 6	0 4 6	Sept. 1875	
1906	East Wheel Well, c, t, Wendron	5 19 0	8 1/2	7 1/2	20 7 6	0 7 6	0 7 6	Oct. 1874	
2800	Foxdale, c, t, Isle of Man	26 00	1 1/2	1 1/2	81 16 0	0 10 0	0 10 0	Sept. 1875	
40000	Glasgow Carr, c, t, (30,000 £1 p., 10,000 15s. p.)	15 00	1 1/2	1 1/2	0 8 4	0 1 0	0 1 0	Sept. 1875	
15000	Great Laxey, c, t, Isle of Man	4 00	16 1/2	16 1/2	18 13 0	0 10 0	0 10 0	Oct. 1875	
35000	Great West Van, c, t, Cardigan	2 00	3 1/2	3 1/2	15 19 6	0 1 0	0 1 0	Aug. 1874	
6008	Great Wheel Vor, c, t, Helston	41 2 0	1 1/2	1 1/2	12 12 0	0 4 0	0 4 0	Oct. 1872	
6400	Grognon, c, t, Cardigan	0 6 0	4 1/2	3 1/2	1 12 0	0 4 0	0 4 0	Oct. 1872	
20000	Grognon, c, t, Cardigan	2 00	3 1/2	3 1/2	0 7 3	0 1 0	0 1 0	Aug. 1875	
9830	Gunnislake (Chiters), c, t	6 00	1 1/2	1 1/2	0 7 3	0 1 0	0 1 0	Aug. 1875	
1024	Herodfoot, c, t, near Liskeard	8 10 0	3 1/2	3 3/4	62 5 0	0 15 0	0 15 0	Oct. 1872	
18000	Kingston Down, c, t, Calstock (24 sh.)	2 8 0	1 1/2	1 1/2	4 3 0	0 5 0	0 5 0	Dec. 1872	
25000	Killalea, c, t, Tipperary	1 00	1 1/2	1 1/2	0 3 11 0	0 6 0	0 6 0	Mar. 1873	
400	Liaburne, c, t, Cardigan	18 15 0	1 1/2	1 1/2	569 10 0	1 0 0	0 8 0	Sept. 1875	
8120	Lovell, c, t, Wendron	0 10 0	1 1/2	2 1/2	0 17 6	0 1 6	0 1 6	Jan. 1874	
11000	Melindur Valley, c, t, Cardigan	3 00	2 1/2	2 1/2	0 7 2	0 3 7	0 3 7	Jan. 1875	
9000	Minera Mining Co., c, t, Wrexham	5 00	7 1/2	5 1/2	63 19 2	0 2 0	0 2 0	May 1875	
20000	Mining Co. of Ireland, c, t, c, t	7 00	1 1/2	1 1/2	0 8 0	0 3 6	0 3 6	July 1872	
12000	North Hendre, c, t, Wales	2 00	1 1/2	2 1/2	1 0 0	0 2 6	0 2 6	Apr. 1875	
2000	North Levant, c, t, St. Just	12 20 0	3	2 3	4 0 0	0 12 0	0 12 0	Sept. 1873	
2500	Old Treburt, c, t, ordinary shares	1 00	3 1/2	3 1/2	0 4 9 0	0 2 6	0 2 6	Feb. 1874	
9250	Old Treburt, c, t, (10 p. st. pref.)	0 10 0	3 1/2	3 1/2	0 5 0	0 5 0	0 5 0	Nov. 1871	
9500	Pedn-an-drea, c, t, Redruth	9 17 0	2 1/2	1 1/2	0 13 6	0 2 0	0 2 0	Nov. 1871	
6000	Penhalls, c, t, St. Agnes	2 00	2 1/2	1 1/2	3 13 6	0 2 0	0 2 0	Nov. 1871	
45798	Penrith, c, t, Gwynn	2 00	2 1/2	3 1/2	0 2 0	0 1 0	0 1 0	Nov. 1871	
6000	Phoenix, c, t, Linkinhorne	4 13 4	4 1/2	4 1/2	39 19 0	0 4 0	0 4 0	Nov. 1872	
1772	Polverto, c, t, St. Agnes	15 00	3 1/2	3 1/2	112 6 0	0 5 0	0 5 0	Mar. 1872	
18000	Prince Patrick, c, t, Holywell	1 00	3 1/2	3 1/2	0 11 6	0 2 6	0 2 6	July 1875	
1120	Providence, c, t, Lelant	16 17 0	3 1/2	3 1/2	104 12 6	0 10 0	0 10 0	Sept. 1872	
2000	Queens, c, t, Holywell	2 00	1 1/2	1 1/2	0 2 0	0 2 0	0 2 0	Sept. 1874	
12000	Roman Gravel, c, t, Salop	7 10 0	18	12 1/2	5 7 0	0 8 6	0 8 6	Sept. 1872	
10000	Shelton, c, t, St. Austell	1 00	130	100 110	722 0 0	0 2 0	0 2 0	Sept. 1875	
812	South Carron, c, t, Illogan	1 00	2 1/2	2 1/2	0 10 0	0 2 6	0 2 6	July 1875	
6128	South Condurrow, c, t, Camborne	6 6 6	6	6 1/2	1 7 6	0 1 6	0 1 6	Nov. 1875	
6000	South Darwen, c, t, Cardigan	8 6 6	1 1/2	1 1/2	1 1 6	0 1 6	0 1 6	Nov. 1870	
10000	So. Fr. Patrick, c, t, (8000 sh. issued)	1 00	1 1/2	1 1/2	0 6 0	0 2 0	0 2 0	Apr. 1876	
8771	St. Just Amalgamated, c, t	3 10 0	1 1/2	1 1/2	0 9 0	0 4 0	0 4 0	Nov. 1871	
12000	Tankerville, c, t, Salop	6 00	11	10 1/2	3 18 0	0 5 0	0 5 0	Aug. 1875	
12000	Tankerville, c, t, Pool, Illogan	9 00	27	28 28	48 8 6	0 5 0	0 5 0	Aug. 1875	
16000	Trefoil, c, t, Bodmin	2 00	1 1/2	1 1/2	0 1 0	0 1 0	0 1 0	Mar. 1874	
4000	Trumpet Consols, c, t, Helston	7 10 0	3 1/2	3 1/2	9 11 0	0 10 0	0 10 0	Nov. 1872	
15000	Van, c, t, Llanidloes	4 6 0	19	28 30	16 18 6	0 14 0	0 14 0	Sept. 1875	
3000	West Trellick, c, t, Redruth	12 10 0	18	16 1/2	52 17 6	0 7 6	0 7 6	Aug. 1875	
612	West Trellick, c, t, Redruth	95 10 0	58	55 1/2	8 10 0	0 1 0	0 1 0	Aug. 1875	
2048	West Wheel Vor, c, t, Illogan	27 3 9	10	9 1/2	3 12 6	0 5 0	0 5 0	Aug. 1872	
612	Wheel Basset, c, t, Illogan	6 6 6	2 1/2	2 1/2	638 10 0	10 0 0	10 0 0	Aug. 1872	
2048	Wheel Basset, c, t, Illogan	2 18 0	3 1/2	3 1/2	11 5 0	0 5 0	0 5 0	July 1875	
4296	Wheel Killy, c, t, St. Agnes	5 10 0	3 1/2	3 1/2	11 19 6	0 2 6	0 2 6	Dec. 1874	
806	Wheel Margaret, c, t, Uly Lelant	15 17 6	1 1/2	1 1/2	82 2 3	0 10 0	0 10 0	May 1872	
80	Wheel Owles, c, t, St. Just	88 5 0	150	170	522 10 0	4 0 0	4 0 0	Aug. 1872	
6000	Wheel Prussia, c, t, Redruth	2 00	1 1/2	1 1/2	0 1 0	0 1 0	0 1 0	Dec. 1874	
12000	Wheel Russell, c, t, Tavistock	1 00	1 1/2	1 1/2	0 3 3	0 6 0	0 6 0	Nov. 1874	
10000	Wheel Whisper, c, t, Variegan	1 00	1 1/2	1 1/2	0 1 6	0 6 0	0 6 0	May 1872	
25000	Wicklow, c, t, Wicklow	2 00	1 1/2	1 1/2	62 0 0	0 2 6	0 2 6	Mar. 1872	
10000	Wye Valley, c, t, Montgomery	3 00	4	4 5	0 6 0	0 3 0	0 3 0	Aug. 1875	

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Prd.	Last Pr.	Clos. Pr.	Total divs.	Per share.	Last paid		
85000	Almaden, c, t, Spain	2 00	2	1 1/2	1 9 9	0 2 0	0 2 0	Sept. 1875	
50000	Almaden, c, t, Spain	1 00	2	1 1/2	0 5 3	0 10 0	0 10 0	Mar. 1875	
30000	Australian, c, t, South Australia	7 7 6	2 1/2	1 1/2	0 15 6	0 2 0	0 2 0	Nov. 1875	
10000	Battle Mountain, c, t, (6240 part pd.)	5 00	1 1/2	1 1/2	0 10 0	0 10 0	0 10 0	Nov. 1875	
15000	Birdseye Creek, c, t, California	4 00	2	1 1/2	0 14 0	0 2 6	0 2 6	July 1874	
6000	Bensberg, c, t, Germany	10 00	3	2 3	0 17 4	0 8 0	0 8 0	July 1873	
12820	Burra, c, t, Australia	8 00	34	38 35	56 0 0	0 10 0	0 10 0	Oct. 1872	
30000	Cape Copper Mining, c, t, South Africa	7 00	34	38 35	21 18 0	0 10 0	0 10 0	Sept. 1875	
40000	Cedar Creek, c, t, California	5 00	3 1/2	3 1/2	0 6 0	0 2 6	0 2 6	July 1873	
80000	Central American Association, c, t	0 16 6	1 1/2	1 1/2	0 6 0	0 6 0	0 6 0	July 1869	
15000	Chicago, c, t, Utah	15 0 0	2 1/2	2 1/2	0 13 6	0 4 0	0 4 0	May 1875	
21000	Colorado Terrible, c, t, Colorado	10 0 0	2 1/2	2 1/2	0 13 6	0 4 0	0 4 0	May 1875	
100000	Don Pedro North del Rey, c, t	0 16 0	3 1/2	3 1/2	2 5 9	0 2 0	0 2 0	Mar. 1875	
23500	Eberhardt and Aurora, c, t, Nevada	10 00	7 1/2	8 1/2	1 0 0	0 1 0	0 1 0	July 1871	
50000	Emma, c, t, Utah	20 00	1 1/2	1 1/2	3 12 0	0 6 0	0 6 0	Dec. 1872	
70000	English and Australian, c, t, S. Aust.	2 00	1 1/2	1 1/2	2 10 9	0 2 6	0 2 6	Mar. 1875	
15000	Ferguson, c, t, California	2 00	1 1/2	1 1/2	0 3 0	0 3 0	0 3 0	April 1872	
30000	Flagstaff, c, t, Utah	10 00	1 1/2	5 1/2	4 2 0	0 5 0	0 5 0	July 1873	
30000	Fortuna, c, t, Spain	2 00	5 1/2	5 1/2	5 0 10 0	0 6 0	0 6 0	Sept. 1875	
80000	Gold Run, c, t, Idaho	1 00	3 1/2	3 1/2	0 2 4	0 4 0	0 4 0	Oct. 1872	
80000	Kapunda Mining Co. Australia	1 30	3 1/2	3 1/2	0 2 4	0 4 0	0 4 0	Oct. 1873	
30000	Last Chance, c, t, Utah	5 00	1 1/2	3 1/2	0 14 0	0 2 0	0 2 0	July 1873	
15000	Linsar, c, t, Spain	8 00	4 1/2	4 1/2	15 4 2	0 8 0	0 8 0	Sept. 1875	
65000	London and California, c, t	2 0 0	1 1/2	3 1/2	0 1 0	0 1 0	0 1 0	July 1875	
7837	Lusitania, Portugal, c, t (24 sh.)	2 10 0	1 1/2	3 1/2	1 11 6	0 1 6	0 1 6	Mar. 1873	
15000	Mammoth Copperopolis of Utah, c, t	10 00	1 1/2	3 1/2	0 4 0	0 4 0	0 4 0	Jan. 1872	
6000	Mountain Chief, c, t, Utah	10 00	1 1/2	3 1/2	0 4 0	0 4 0	0 4 0	Jan. 1872	
18000	Prussian Mining & Ironworks, c, t	30 00	20	18 20	6 0 0	0 3 0	0 3 0	July 1873	
10000	Portuguese, c, t, France	20 00	20	18 20	19 11 0	0 11 0	0 11 0	Jan. 1876	
100000	Port Phillip, c, t, Clunes	1 00	1 1/2	3 1/2	1 0 0	0 1 0	0 1 0	Jan. 1872	
54000	Richmond Consols, c, t, Nevada	5 00	9 1/2	9 1/2	2 14 0	0 7 6	0 7 6	May 1875	
120000	Richmond Australian Mining Co., c, t	1 00	1 1/2	1 1/2	12 1/2	per cent.	May 1875		
112500	Sierra Butte, c, t, California	11 250	1 1/2	1 1/2	1 12 0	0 2 0	0 2 0	Oct. 1875	
60000	South Aurora, c, t, Nevada	5 00	3 1/2	3 1/2	0 14 2	0 2 0	0 2 0	Nov. 1873	
4253000	St. Louis Key, c, t (25 stock and multiples dealt in)	380 400	3 1/2	3 1/2	30 2 0	per cent.	Jan. 1875		
15000	Sweetland Creek, c, t, California	4 00	3 1/2	3 1/2	3 0 0	0 2 0	0 2 0	Sept. 1875	
20000	Tollima, c, t, (6000 sh. are £5 f. pd.)	4 00	3 1/2	3 1/2	0 11 6	0 6 0	0 6 0	May 1874	
15000	Western Andes, c, t, New Granada	5 00	5 1/2	5 1/2	2 13 0	0 8 0	0 8 0	Sept. 1875	

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Prd.	Last Pr.	Clos. Pr.	Div.	Last Paid.
30000	Anglo-Australian, <i>s</i> , Victoria*.....	2 10 0	—	—	Sept. 1877	—
3000	Bellavista, <i>s</i> , Peru* (410 shares).....	10 0 0	—	—	—	—
3000	Blue Tent, <i>Hyd.</i> , California.....	5 0 0	5	4½ 5½	—	—
50000	Braganza, <i>s</i> , Brazil*†.....	0 15 0	—	—	—	—
12000	Camp Floyd, <i>s</i> , Utah*.....	10 0 0	—	—	—	—
35000	Cosena Sulphur Company, Romanga, Italy*.....	10 0 0	—	—	—	—
50183	Chontales, <i>s</i> , Nicaragua*† (and 12,542 of £1 15s.).....	2 0 0	—	—	—	—
6000	Clifton, <i>s</i> , Colorado*.....	5 0 0	—	—	—	—
10000	Crescent, <i>s</i> , Plumas County, California*.....	10 0 0	—	—	—	—
100000	Cuiaba, <i>s</i> , Minas Geraes, Brazil*.....	0 17 6	—	—	—	—
10000	Douglas, <i>s</i> , Georgetown, Col.	5 0 0	—	—	—	—
35000	Excelsior Hydraulic Gold Washing Co., California.....	6 0 0	—	—	—	—
80000	Exchequer, <i>s</i> , <i>s</i> , California*.....	1 0 0	—	—	—	—
50000	Frontino and Bolivia, <i>s</i> , New Granada*†.....	2 0 0	—	—	—	—
50000	General Brazilian, <i>s</i> *.....	1 0 0	—	—	—	—
10000	Goetzl Tunnel Co., Georgetown, Col.	7 0 0	—	—	—	—
40000	Holcombe Valley, <i>s</i> , California.....	1 0 0	—	—	—	—
8000	Holcombe Valley, <i>s</i> , California.....	1 0 0	—	—	—	—
20000	Imperial Brazilian Colliers, Brazil*.....	5 0 0	—	—	—	—
30000	Independence, <i>s</i> , California.....	5 0 0	—	—	—	—
20000	I. X. L., <i>s</i> , <i>s</i> , California*.....	5 0 0	—	—	—	—
50000	Javali, <i>s</i> , Nicaragua*.....	5 0 0	—	—	—	—
12000	Lanestosa, <i>s</i> * i, <i>s</i> , Viscaya, Spain (£2 shares).....	1 12 6	—	—	—	—
75000	Malabar, <i>s</i> , Colombia* (65000 issued).....	1 0 0	—	—	—	—
4000	Malaga, i, Spain*.....	1 0 0	—	—	—	—
40000	Malpaso, <i>s</i> , Colombia* (10000 pref. shares, fully paid).....	10 0 0	—	—	—	—
12000	Menzenberg, <i>c</i> , Honnef, Germany*.....	5 0 0	—	—	—	—
15000	Monte Loretto, <i>s</i> , <i>s</i> , Italy*.....	5 0 0	—	—	—	—
15000	New Pacific, <i>s</i> , Nevada*.....	0 10 0	—	—	—	—
56000	New Quebrada, <i>s</i> , Venezuela*.....	0 10 0	—	—	—	—
50000	New Rosario, <i>s</i> , Venezuela*.....	5 0 0	—	—	—	—
20000	New Zealand Kapanga, <i>s</i> , Coromandel*.....	1 0 0	—	—	—	—
10000	New Zealand, <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <i>s</i> , <					